SPECIAL RESOURCE STUDY

Z-BAR (SPRING HILL) RANCH

CHASE COUNTY, KANSAS

Prairie Cluster
Long-Term Ecological
Monitoring Program
National Park Service

MIDWEST REGION

MARCH 1991

SUMMARY

The Z-Bar (Spring Hill) Ranch is a 4,409 hectare (10,894 acre) cattle ranch, located 3.2 kilometers (2 miles) north of Strong City, in Chase County, Kansas. The ranch contains extensive tallgrass prairie. Several buildings listed on the National Register of Historic Places are located on the property. The ranch is owned by the Trust Department of Boatmen's First National Bank of Kansas City, Missouri. The bank leases the property for seasonal livestock grazing.

Based on a proposal initiated by the West Central Regional Office of the National Audubon Society, a local citizen's group suggested that the property be purchased and designated a unit of the National Park System. Members of the Kansas delegation to the U.S. House of Representatives forwarded a request for a study of the property to the Director of the National Park Service (NPS). In response to this Congressional request, the NPS has completed Special Resource Study of the Z-Bar Ranch. The study was conducted in two phases: a Study of Significance and a Study of Alternatives.

The Significance Study was conducted in accordance with established NPS planning processes and followed established criteria for determining significance. The Study addressed the natural and cultural resources of the ranch to determine whether they are, individually, or in combination, of sufficient significance to meet the criteria for potential inclusion as a unit of the National Park System. Included was a preliminary analysis of the site's eligibility as either a National Natural Landmark (NNL), or a National Historic Landmark (NHL).

The conclusion of this study is that the Z-Bar contains significant natural and cultural resources; may be eligible for both NNL and NHL designation; and, is both suitable and feasible as a potential addition to the National Park System.

The NPS will consider pursuing both National Historic Landmark and National Natural Landmark designation for the Z-Bar Ranch when funding becomes available.

The strategy employed in the Study of Alternatives was to prepare a set of management objectives which address protection of the site's resources and provide for interpretation and visitor use. Each alternative was then evaluated based on its ability to meet those objectives.

The Study of Alternatives identifies five alternatives under which the NPS believes the ranch could be managed. The alternatives identified within the study are: A. No Action--which recommends the ranch continue to operate under private ownership; B. Flint Hills/Z-Bar Ranch National Historic Site; C. Flint Hills Prairie National Monument; D. Protection of the Z-Bar Ranch by State or Local Government Agency; and, E. Private Conservation Organization Reserve.

This report takes no position on which of these alternatives, if any, should be pursued.

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I. INTRODUCTION

Purpose and Scope

This report documents the results of a Special Resource Study conducted by the National Park Service (NPS) on the Z-Bar Ranch near Strong City, Kansas. This study was initiated at the request of the Kansas House delegation. The scope of this project included a Study of Significance and a Study of Alternatives. An analysis of what economic impact park development might have on tourism and the local economy, completed by a consultant from Kansas State University, is included. The study was conducted in accordance with established NPS planning processes and followed established criteria for determining significance as referenced elsewhere in this document. The Study of Significance addressed the natural and cultural resources of the ranch to determine whether they are, individually, or in combination, of sufficient significance to meet the criteria for potential inclusion as a unit of the National Park System. The Study of Alternatives developed and assessed a range of alternatives for the possible future management, protection, and use of the site.

Background

In July 1988, the National Audubon Society acquired an option to purchase the Z-Bar (Spring Hill) Ranch, a 4,409 hectare (10,894 acre) cattle ranch, located 3.2 kilometers (2 miles) north of Strong City, Kansas. The property contains extensive tallgrass prairie and several buildings listed on the National Register of Historic Places. The ranch is owned by the Trust Department of Boatmen's First National Bank of Kansas City, Missouri. The Audubon Society's option expired in July 1990 and was not renewed.

The Audubon Society suggested the property be purchased and designated a unit of the National Park System. Substantial local interest was generated by this idea. In 1989, a group of Chase County citizens formed the Flint Hills National Monument Committee (FHNMC) which proposed the ranch be designated as the "Flint Hills Prairie National Monument." The FHNMC forwarded this suggestion to the Kansas Congressional delegation.

Representative Dan Glickman, supported by the other members of the Kansas delegation to the U. S. House of Representatives, proposed funding for a NPS-conducted new area study in the 1990 Appropriations Bill. No action was taken on this proposal.

In August 1989, at the request of the delegation, NPS Director James Ridenour agreed to conduct the study using existing funding. He authorized the Service's Midwest Regional Office to evaluate the ranch property to determine its significance, suitability, and feasibility as a potential addition to the National Park System. A study team was organized and work on this project began in January 1990.

The FHNMC's proposal generated substantial interest from local residents and statewide agricultural, livestock, and conservation organizations. The issue of whether there should be a "monument" in Chase County divided its citizens into two opposing factions and generated much disagreement.

Summary of Public Involvement

National Park Service policy requires that the public be afforded ample opportunities for involvement during all phases of a study process. Organizations and persons having an interest in the study were identified. The study was formally initiated through a news release, which notified all interested parties of the process, requested their early involvement, and informed them of opportunities for input as the study progressed. Substantial public, political and media interest surrounded this project from the beginning. Two public meetings were held - one during the initial information gathering phase of the study and one during a later visit by the study team. Public comments were accepted throughout the study process.

Issues and Concerns

Although there was no Congressional effort underway to establish a national monument in Chase County, a widespread perception that such designation of the Z-Bar was inevitable pervaded most attempts at dialogue. From the onset, the focus of the study was shifted from the study process to issues that were decidedly beyond its scope. A variety of issues and concerns related to park development, resource management, or operations were raised.

At the March 23 public meeting in Strong City, over 60% of the citizens commenting opposed the "monument proposal" citing a variety of reasons. At the meeting in Cottonwood Falls on June 28, approximately 75% of the questions and comments received were related to situational management or operational issues.

Comments received by mail between March 23 and October 1, 1990, were generally evenly divided between those favoring designation of the Z-Bar as a national monument and those opposing it. Slightly more than half (53%) favored a national monument on the Z-Bar property. The remainder opposed designation of a national monument based on a variety of operational and management-related concerns.

Many citizens want future economic development and tourism growth for public and private benefit, and for the economic survival of their community. However, there is an underlying concern that large numbers of visitors attracted to a federally designated site would have a negative effect on the quality of life in the two nearby communities and the surrounding county. Much anxiety in this regard was expressed during the course of the study, at the two public meetings, and through the mail.

If the Congress should ultimately decide that the NPS will play a substantial role in the future of Chase County, public concerns have been raised about the extent of federal involvement. The most frequent concerns expressed were: (1) the influence of park management on property beyond a Congressionally authorized boundary; and, (2) a perceived unwillingness or inability on the part of the Federal Government to abide by local customs regarding prescribed burning, livestock inoculations, fence repair, fire control, watershed protection, and informal access rights to adjoining properties. Fear of a profusion of burdensome Federal rules and regulations affecting the local population was a recurring theme. Another concern related to the removal of revenue-producing property from the local tax rolls. There is great anxiety over the possible use and extent of eminent domain authority. Local citizens and public officials are both curious and apprehensive regarding what level of park development might be pursued.

Some citizens sought assurances regarding what effect development might have on the local economy; on the livestock and oil and gas industries; and on tourism potential and related economic development. The local government's ability to keep pace with increased demands for highway improvements, schools, fire protection, solid waste disposal etc., is uncertain. The threat of what effect, if any, a departure from the status quo might have on rural lifestyles seems of great concern. Finally, many questioned what impact a potential purchase of the Z-Bar property would have on the Federal budget deficit and mentioned their desire that the NPS should "take care of what it has now" rather than acquire "new" park areas.

Comments received in favor of a tallgrass prairie monument praise the efforts of local supporters to preserve the Z-Bar. Many supporters perceive an opportunity to include a representative segment of tallgrass prairie in the National Park System. The need to act quickly to preserve a portion of native tallgrass prairie for "all Americans to enjoy" was mentioned often, as was the need to preserve the historic structures in the ranch headquarters complex. Proponents have high expectations for the positive economic development that a National Park Service area could generate for a struggling local economy. Other comments mention preservation of the Flint Hills grasslands would reinforce a sense of pride in Kansas' "heritage."

Opposing comments generally originated from Chase County, its neighboring counties, and from statewide agricultural and livestock organizations. Supportive comments were received from throughout Kansas and from addresses outside the state.

The Study of Alternatives considers the issues and concerns raised during the study process and suggests strategies to resolve them.

II. DESCRIPTION OF THE STUDY AREA

Regional Setting and Access

The study area lies in the heart of the eastern edge of the Great Plains Region of the United States (Figure 1) and is situated within the Kansas Flint Hills. Specifically, the Z-Bar Ranch is located in east-central Kansas, a few miles north of Strong City in Chase County (Figure 2). The study area is situated in the middle of a regional triangle that is formed between the cities of Topeka to the northeast, Salina to the northwest, and Wichita to the southwest. Topeka and Salina are connected principally by Interstate 70; Salina and Wichita are connected by Interstate 135; and Wichita and Topeka are connected by Interstate 35. The Z-Bar can be reached from either the north or south along Kansas Highway 177, which links Interstate 70 to the north with Interstate 35 to the south. The highway passes through the ranch property and immediately in front of the ranch headquarters complex. The closest east-west access route is U.S. Highway 50, which extends from Emporia in the east, through Strong City, and proceeds west to Newton. All of these roads are in excellent condition and allow the ranch to be readily accessible from almost any direction for potential visitors. Figure 3 shows the Z-Bar Ranch study area.

Physical Environment

Climate

The climate of the region is a sub-humid, continental type characterized by wide fluctuations in daily and annual temperature ranges (-30 degrees F. to 118 degrees F.); most precipitation occurring in the warmer season; and changeable day-to-day weather. The summers are generally warm to hot and the winters cold and dry. Seasonal changes occur quite rapidly.

Precipitation averages 32 inches per year. Most precipitation results from warm, moist air from the Gulf of Mexico colliding with cooler, drier air from the north. The clash of air masses often results in violent storms which may produce heavy rain, hail, strong winds, and tornados. Nearly three-fourths of the precipitation falls during the growing season, April through September. Only about one-tenth of the precipitation falls during the period, December through February. Snow fall is light, averaging 17 inches annually, and accumulations usually melt within a week. This weather pattern generally favors the growth of warm-season crops and grasses.

Figure 1

REGIONAL SETTING

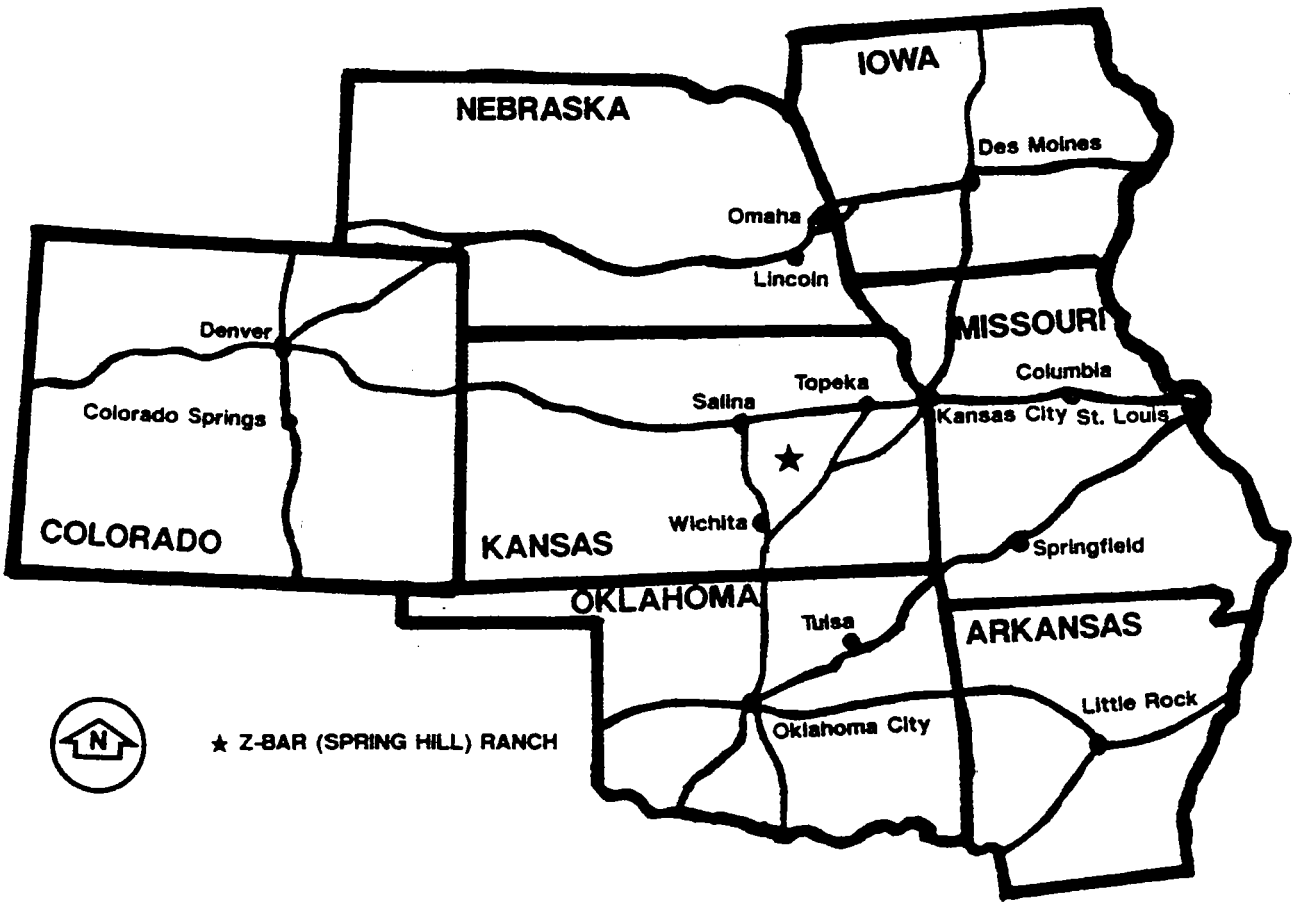


Figure 2

STUDY AREA

Chase County, Kansas

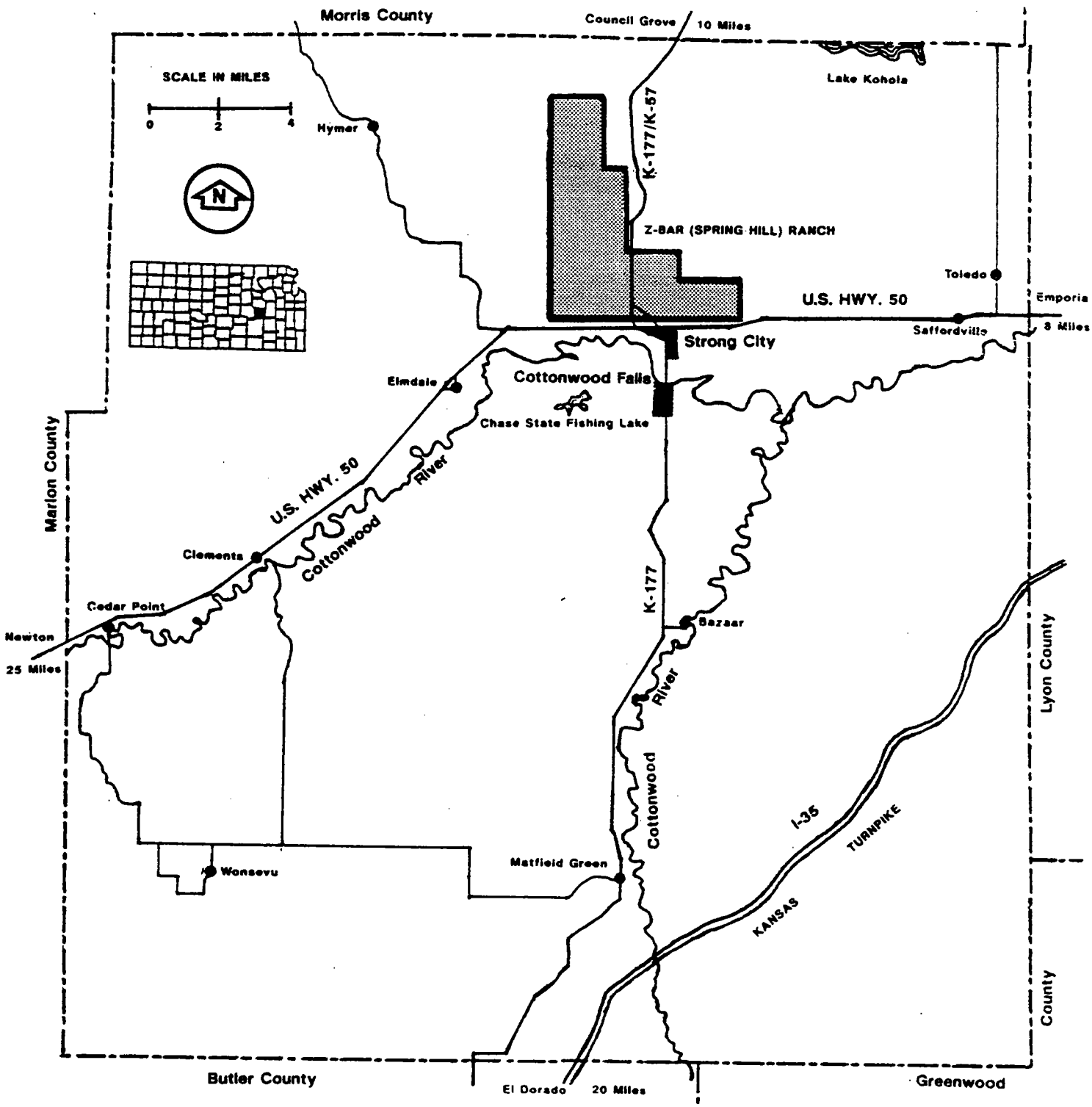
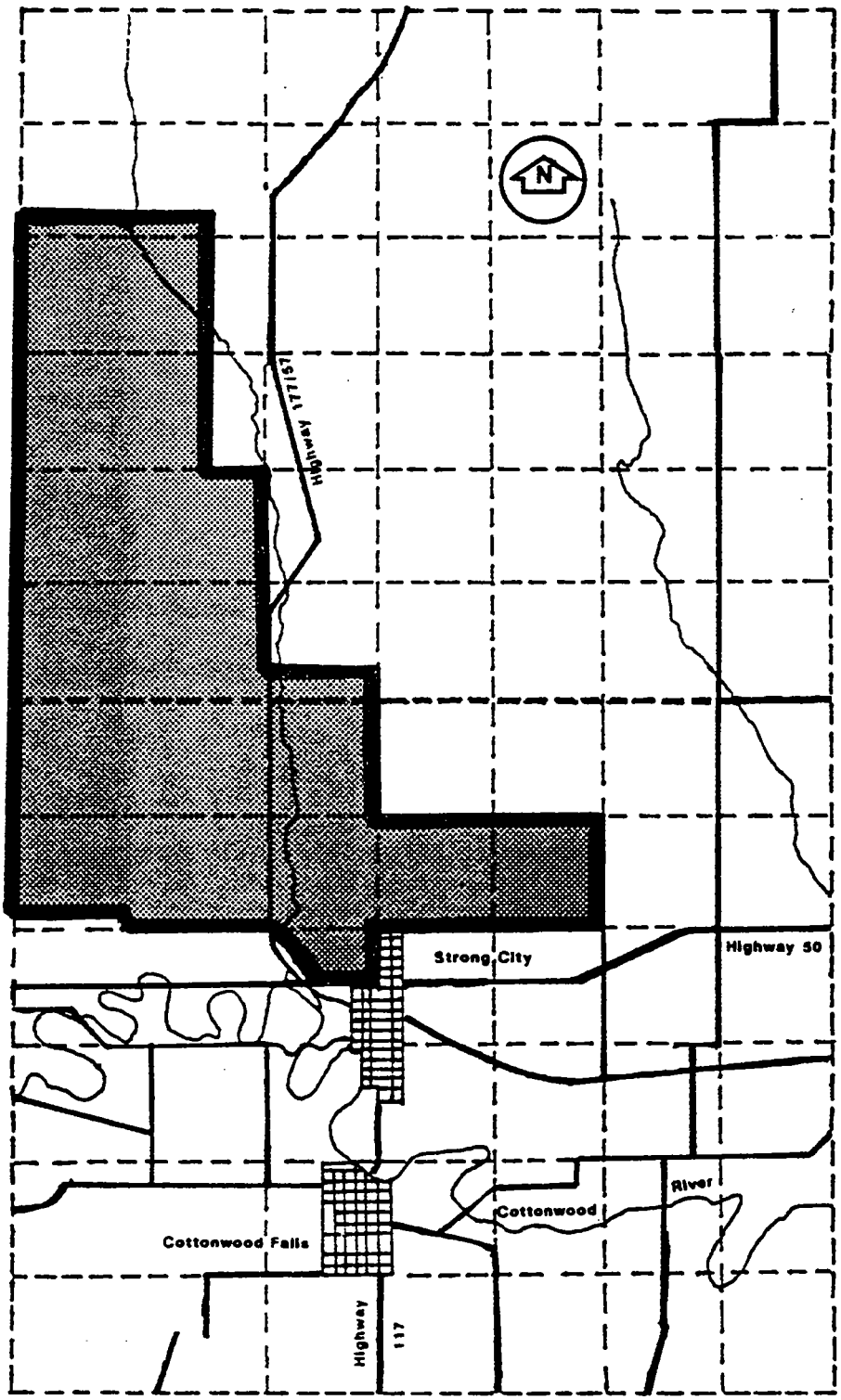


Figure 3



Z-BAR (SPRING HILL) RANCH

Geology

The Flint Hills form a 70 kilometer (43 mile) wide north/south band across eastern Kansas. This range of hills is an eastward facing, dissected escarpment of erosion-resistant limestones and more easily weathered shales. The more resistant beds form benches, while the intervening slopes are covered by shallow, rocky soils strewn with chert fragments. Rolling topography and rocky soils have historically been a deterrent to cultivation. Hence, the Flint Hills remain the most extensive remnant of virgin tallgrass prairie in North America.

Soils

Of the six soil associations identified within Chase County, the Florence-Labette, Reading-Tully, and Clime-Sogn are found on the Z-Bar Ranch. These soils formed mainly from material weathered from limestone and interbedded shale. Soils on slopes and uplands are typically shallow and rocky while those in the Fox Creek valley are deeper and more permeable.

Water Resources

The only permanent streams within the Z-Bar Ranch are Fox Creek, a tributary to the Cottonwood River, and Palmer Creek, a branch of Fox Creek. A number of natural springs occur within the ranch. Most springs have been dammed as sources of water for domestic livestock.

Air Quality

Although specific localized data is not available, air quality within the area is generally considered good. Potential sources of air pollution are few. Short-term reductions in overall air quality and visibility can occur when rangelands are burned off to enhance forage production.

Biotic Environment

Uplands within the Z-Bar Ranch are dominated by tallgrass or true prairie species including big bluestem (Andropogon gerardii), little bluestem (A. scoparius), and indiangrass (Sorghastrum nutans). Lowlands with deep soil have been cultivated or converted into pastures of smooth brome (Bromus inermis). The gallery forests along the two permanent streams are dominated by burr oak (Quercus macrocarpa) and hackberry (Celtis occidentalis). Over 400 species of vascular plants are estimated to occur on the Z-Bar.

Although no faunal inventories have been conducted on the ranch, wildlife is expected to be similar to those species occurring at Kansas State University's

Konza Prairie Research Natural Area, a 3,480 hectare (8,600 acre) tract located about 56 kilometers (35 miles) north. Studies at Konza have documented 29 species of reptiles and amphibians, 199 species of birds and 31 species of mammals.

The Z-Bar is currently managed as a working cattle ranch. Grazing usually commences around May 1 and continues until October 1. In addition, the prairie is burned most springs.

Cultural Resources

Ranch House and Outbuildings

The ranch house (Figure 4) is a striking 3-story, 11-room structure constructed of native limestone. It was built by Z-Bar (Spring Hill) Ranch founder Stephen Jones in 1881 on a bluff overlooking the Fox Creek valley north of Strong City. With its mansard roof and dormer windows, it represents a unique example of Second Empire style architecture. The house and outbuildings (barn, springhouse/smokehouse, outhouse, workshop, poultry house, equipment shed, and garage) together present a composite group of rural buildings, using a single building material and functioning as a unit. The overall condition and historic integrity of the house and other structures is good. The ranch house was placed on the National Register of Historic Places in 1971. No historic furnishings are extant on the site.

Barn

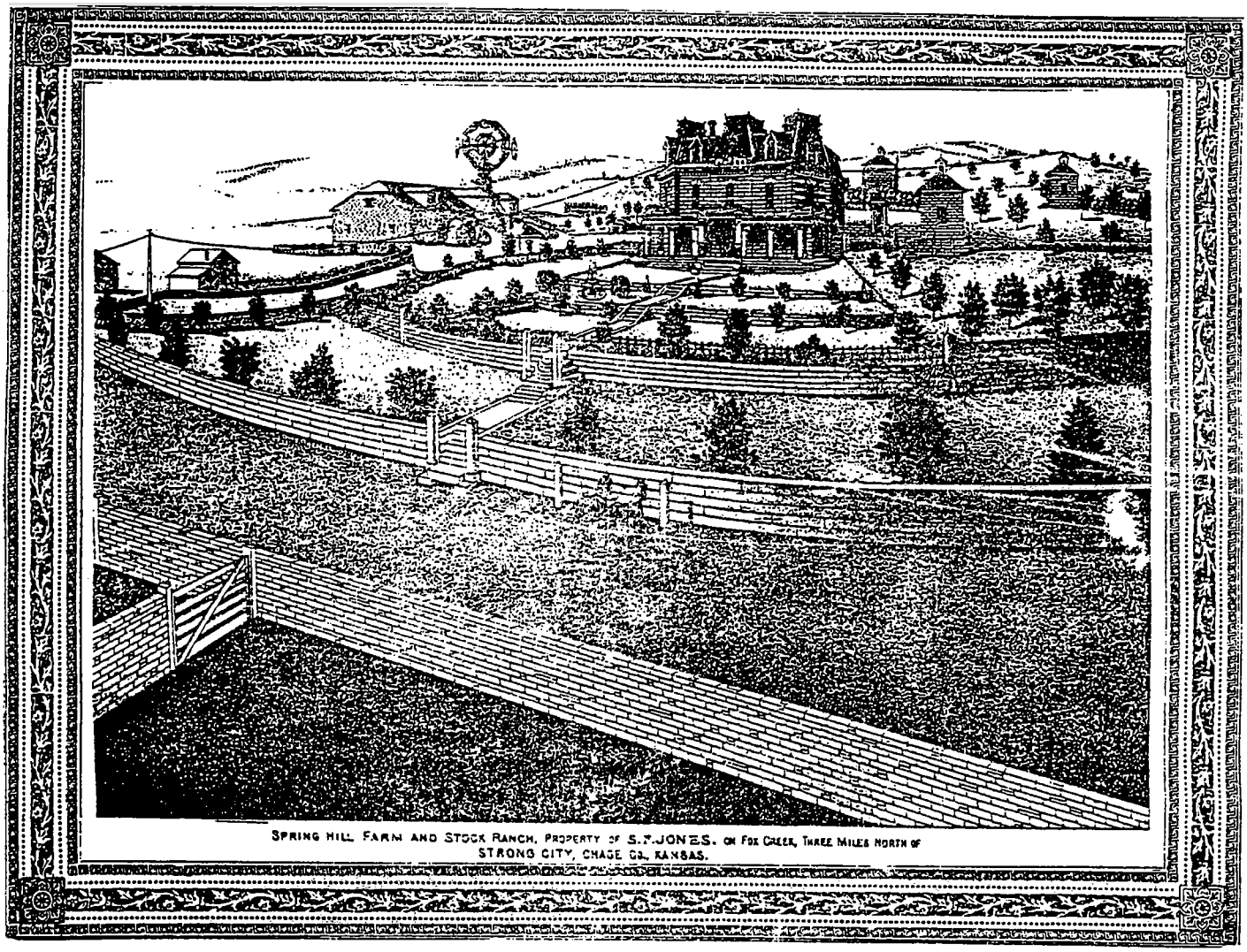
The massive three-story stone barn contains approximately 6,500 square feet and is in excellent condition. It is built into a hillside so the first floor is accessible from ground level on the south, the second floor from ground level on the north, and the third level by ramps from the north side. The barn houses several large, moveable farm implements dating to the late 19th Century. Depending on an analysis of their function and condition, they could form the nucleus of a museum collection and be useful in an interpretive program.

Fox Creek Schoolhouse

The Fox Creek Schoolhouse is located on the Z-Bar approximately 1.6 kilometers (one mile) north of the ranch headquarters complex. It was built in 1882 on land donated by Stephen Jones and operated as a school between 1884 and 1930. The schoolhouse was restored (circa 1882) by a local organization of garden clubs in the 1970's. The interior has been partially refurnished. The Fox Creek Schoolhouse was placed on the National Register of Historic Places in 1974.

A general condition inspection was performed on the Z-Bar Ranch's stone structures in October 1990 by a NPS Historical Architect. A report with cost estimates for stabilization of the historic structures is included in this report as Appendix A. Costs for restoration or any adaptive use would be substantially higher.

Figure 4



Z-BAR (SPRING HILL) RANCH BUILDINGS

From an 1867 Lithograph

Socio-Economic Environment

The 1990 Census established the population of Chase County at 3,013 residents. Approximately 60% of county residents live in five incorporated towns. Strong City has 613 residents. Cottonwood Falls, the larger of the two towns nearest the Z-Bar, and the county seat, has 889 residents. The remaining 40% of the population resides in rural areas. The estimated population density is about 1.5 persons per square mile. Chase County's population has declined 13.1% since the 1980 Census and nearly 64% since the 1910 census. The population is aging with nearly one-third being over 60 years old.

Agriculture and livestock operations have historically been the mainstays of the Chase County economy. The most typical use of rangeland within the region surrounding the study area is for seasonal cattle grazing. Agricultural lands are concentrated in lowland areas. Crop production is limited elsewhere due to shallow, unsuitable soils.

A downward trend in agricultural sector employment is evident. According to the Kansas Statistical Abstract, 1980 employment figures compared with figures from 1950 show agriculture accounts for 22% of the jobs in Chase County, down from 58%. Over the same period, employment in the wholesale and retail trades increased from 16% to 19%, and those in professional occupations increased from 5% to 20% of the total workforce. In 1987, per capita income was $16,011, up 65% from 1980.

Tourism-related businesses currently represent a very small part of the economic base in the communities surrounding the study area.

A detailed analysis of the economic impact park development might have on tourism and the local economy was conducted by Dr. Sid Stevenson of the Department of Leisure Studies at Kansas State University (Appendix B).

Landownership and Use

The entire Z-Bar Ranch has been owned since 1986 by the Trust Department of Boatmen's First National Bank of Kansas City, Missouri. For the past several years, the bank has leased pasture for seasonal (May-October) livestock grazing. Approximately 370 acres of the ranch is cultivated cropland.

Approximately 30 abandoned oil and gas wells and associated pipelines are scattered throughout the ranch, particularly in the northern one-half. No oil was found and the natural gas discovered was high in impurities and low in BTU's. The bank retains the mineral rights.

The National Audubon Society held an option contract (direct purchase or assignment to an appropriate agency) on the property for two years. The option expired in July 1990 and was not renewed.

Perceptual Environment

When travelling to the Z-Bar Ranch, a visitor is exposed to some of the most dramatic landscapes of tallgrass prairie that exist anywhere. Seemingly endless miles of rolling grasslands stretch out to surround the visitor from horizon to horizon. The main topographic features of the Flint Hill Uplands in Chase County are the east-trending Cottonwood and Verdigris River valleys and the uplands, which consist of rounded to steep hills and cover over 80 percent of the county.

Historically, the Chase County region has been a center for the beef cattle industry. The growing of crops is mainly for winter feed for livestock, but some areas are used to produce cash crops. Therefore, the landscape mosaic is strongly dominated by expanses of native prairie rangelands with intermittent corridors of woodland along existing streams and drainageways. Occasional patches of cultivated land can be seen throughout the region, especially in bottomland areas. Farm and ranch complexes are sparsely distributed over the land and impart (to those not familiar with the region) a sense of isolation and of the overwhelming influence of the land on its people. Goods and services to meet the primary and basic needs of these people are available in the small towns and villages scattered throughout the region.

III. STUDY OF SIGNIFICANCE

In a July, 1989 memorandum NPS Director James Ridenour addressed the issue of "National Significance Determinations in Special Resource Studies." The Director indicated that "studies of potential additions to the National Park System will apply the criteria for national significance as addressed in the National Park Service's 1988 Management Policies." These criteria, as well as standards for resource evaluation, suitability, and feasibility, are also outlined in the Service's 1990 publication Criteria for Parklands. A proposed unit is considered to be nationally significant if meets all of the following criteria:

- It is an outstanding type of a particular type of resource.
- It possesses exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage.
- It offers superlative opportunities for recreation, public use and enjoyment or for scientific study.
- It retains a high degree of integrity as a true, accurate and relatively unspoiled example of a resource.

Significance of a proposed area relates to themes contained in Natural History in the National Park System and on the National Registry of Natural Landmarks (1990) and in History and Prehistory in the National Park System and the National Historic Landmark Program (1987). These documents present a framework of significant themes so that areas representing those themes can be identified for potential inclusion in the National Park System. One objective of this study was to identify and evaluate significant historic and natural history themes which are represented in the study area.

Description of the Study Process

The Z-Bar Ranch property was evaluated using significance criteria for both historic and natural history themes. This study fulfills the "Reconnaissance Survey" requirement of NPS Planning Process Guideline (NPS-2). As part of the study, the NPS conducted a literature search and met with knowledgeable professionals, organizations, governmental agencies, and members of the public to obtain information to permit an assessment of the quality and significance of historic and natural resources within the study area. Appropriate field work was conducted to determine the composition of native prairie in selected areas of the ranch. All areas of the ranch were classified as to range site and the existing range condition was determined. Professional ecologists, a historian, and a historical architect visited the site to gather data for their segments of this study. Consultants from the private sector and from Kansas State University assisted NPS personnel with the historical, ecological, and socio-economic portions of this study. A Level I hazardous waste survey following Department of the Interior Guidelines 602 DM 2 was conducted (Appendix C).

The significance of the ranch's natural resources was addressed on the basis of the criteria for evaluating proposed National Natural Landmarks (NNL). These criteria are outlined in Title 36, Code of Federal Regulations, Part 62. Based on information developed for this study, the NPS may consider pursuing NNL designation for the Z-Bar when funding becomes available.

Historic and architectural significance is addressed using criteria for evaluating proposed National Historic Landmarks. In 1990, a landmark nomination for the Z-Bar Ranch was suggested by the Kansas Chapter of the American Institute of Architects (AIA). Although funding for a survey and planning grant for this project was not available, this proposal is supported by the staff of the Kansas State Historical Society (KSHS) in Topeka. Data from this NPS study will be made available to the Society. The NPS is available to discuss, with the KKHS or AIA, options and possible strategies for preparation of a NHL nomination, taking into account staffing and funding constraints. This would be the best method of establishing whether the Z-Bar meets NPS national significance criteria related to cultural resources.

Issues relating to the site's existing management and protection; the need for further evaluation; and development of management strategies for the property were not addressed in the Significance Study, since a Study of Alternatives was also completed.

Study of Historic Significance

The NPS uses a thematic system to classify the United States' historic resources. A comprehensive network of themes, subthemes, and facets has been developed to guide studies of historic resources based on national significance. These themes and subthemes are listed in History and Prehistory in the National Park System and the National Historic Landmark Program. The study area was principally evaluated within the context of Theme X. "Westward Expansion of the British Colonies and the United States, 1763-1898"; subtheme G, the "Cattlemen's Empire"; and facet 3, "Ranches." The "Cattlemen's Empire" subtheme is concerned with the "history of the cattle industry west of the Appalachians, which reached its apogee in the Great Plains during the latter half of the 19th Century. Major phases include the large open Texas ranges in the 1860's and the transition to the enclosed holdings of large cattle companies in the 1880's."

The current Z-Bar Ranch represents an outstanding example of this facet as it represents the merging of two large cattle ranches originally formed through the independent land purchases of Stephen F. Jones and Bernard "Barney" Lantry. Jones had acquired some 7,000 acres through many separate land purchases of varying acreages by the mid - 1880's. In 1880, Jones began construction of a magnificent Second Empire style ranch house, a massive barn, and an impressive array of functional outbuildings. In 1888, Jones sold his holdings to Barney Lantry, already a large Chase County landholder, to form an even larger, enclosed ranch. The greater part of the nearly 15,000 acre ranch was rolling grassland on which hundreds of cattle were grazed. Both ranches also contained rich bottomlands on which a variety of crops were grown.

In the early 20th century the Lantry family holdings were dispersed through various sales. In the 1930's, much of the original ranch was reformed by George H. Davis. It is this land which comprises the Z-Bar today. A brief history of the Z-Bar Ranch by Joseph W. Snell, is included as Appendix D.

Historically, the typical Flint Hills ranch encompassed thousands of acres on which vast herds of cattle grazed during the summer. The Z-Bar is an excellent example of one of the few remaining large ranches which were important in Kansas' unique Flint Hills.

The massive limestone ranch house, three-story stone barn, and the cluster of related outbuildings were built in 1880-1881 by Z-Bar Ranch founder Stephen Jones. Together they present a composite group of buildings, constructed of a single building material that function as a unit. The ranch headquarters complex reinforces the significance of the Z-Bar related to the "Ranches" facet of Theme X.

The ranch house presents a unique example of Second Empire style architecture. In contrast to other, mid-19th Century architectural styles (e.g., Italianate, Renaissance Revival, and Gothic Revival), Second Empire was a "modern" fashion popular in France at the time. The double-pitched, hipped (Mansard) roof is the diagnostic characteristic of the Second Empire style. While the detailing of the doors, windows, porches and floor plan is similar to other mid-19th Century structures, the Mansard-roofed attic story is unique to the Second Empire style. The design of the Z-Bar ranch house has some marvelous adaptations to local conditions and materials. It exhibits detailing common to the period and locale. There is an overwhelming impression that Stephen Jones, had a thoughtful and deliberate design concept for the site based on national fashion and historic precedent.

The ranch headquarters complex of structures, using local building materials and adapted to the site, represents a unique combination of Second Empire and other 19th Century architectural styles, uncommon in the Great Plains. The Second Empire style is architecturally significant and displays an architectural theme (Theme XVI-I) currently under-represented in the National Park or National Historic Landmark System.

The overall condition of the house and related structures is very good. Only minor alterations have been made to the house since its construction. The interior is excellent in both fabric condition and design. The distinct Second Empire style has not been compromised. The ranch house, determined to be of State significance in Kansas, was placed on the National Register of Historic Places in 1971. The Fox Creek Schoolhouse is located on the Z-Bar north of the ranch headquarters complex. It was built in 1882 on land donated by Stephen Jones and operated as a school until 1930. The Schoolhouse also of State significance, was placed on the National Register of Historic Places in 1974.

Little is presently known about the prehistory of the study area. Native Americans undoubtedly lived and hunted throughout the surrounding area. Because of the habitat, water, and probable wildlife conditions that existed prehistorically, there is good reason to assume that additional evidence might be discovered through future research.

Study of Natural Resource Significance

Natural History in the National Park System and on the National Registry of Natural Landmarks divides the country into natural regions based on Fenneman's Physiographic Divisions of the United States. The study area lies in the Flint Hills of east-central Kansas. It spans an undefined boundary between the Great Plains and the Central Lowlands Natural Regions. The Flint Hills remain covered by the most extensive remnant of tallgrass prairie in North America. The "Grassland" natural history theme; including Tallgrass, Mixed Grass, and Shortgrass Prairie, is considered of prime significance for inclusion in the National Park System.

The NPS defines nationally significant natural resources as those having exceptional qualities illustrating or interpreting the ecological or geological themes of the nation. Guidelines for studies of potential new park areas require that two primary criteria for evaluating National Natural Landmarks (NNL) be met. These criteria involve an analysis of both illustrative character and present condition. The guidelines also provide that three secondary criteria relating to other significant features or qualities in addition to the principal features found in the study area be evaluated (i.e., diversity, rarity, and scientific/educational value).

Primary Criteria

Illustrative Character

The Director's July, 1988 memorandum specifies "guidelines for NNL nominations call for a brief assessment of at least three similar sites to document the relative quality of the area proposed for designation." Since there are no comparable tallgrass prairie sites within the National Park System or that have been designated as NNL's; sites evaluated during a NPS study conducted in 1974-75 were used. In that study, the NPS analyzed seven suggested study areas in Kansas and Oklahoma applying criteria developed to evaluate national significance. These criteria required that the study area be:

1. A representative tallgrass prairie ecosystem illustrating characteristic topography, vegetation, drainage patterns, and wildlife;

2. A tallgrass prairie community that is relatively stable, or in the process of succession to a natural condition, as demonstrated by a relative lack of disturbances and invader species, vigor of plant communities, and predominance of climax vegetation;

3. An area that manifests the scenic attributes of prairie spaciousness, expansive grasslands, riparian woodlands, and rolling topography;

4. A manageable unit that permits effective control and protection of resources; that encompass either complete watersheds or headwaters; that encloses an area with, more or less, equal dimensions; and that lacks interruptive features;

5. A site that can be adapted to provide numerous and diverse opportunities for visitor enjoyment of natural, cultural, and scenic values within a natural tallgrass prairie setting; and,

6. A land area that is relatively free of adverse manmade intrusions or disturbances.

Although none of the seven sites fully met all six requirements, three sites exhibiting the most desirable characteristics and features were selected for further study (i.e., the resources of these sites were significant).

In this study, the illustrative character of the Z-Bar was assessed using the criteria developed in the 1974-75 study. The results are shown in Table 1.

Table 1. Evaluation Summary for 7 Sites Studied in 1974-75 and the Z-Bar Ranch studied in 1990.

Study Area	Criteria 1	2	3	4	5	6	Evaluation Summary
Pottawatomie	+	-	+	-	+	-	Rejected
Wabaunsee East	+	-	++	-	+	--	Rejected
Wabaunsee West	++	++	+	++	+	+	Further Study
Chase North	-	++	-	--	-	+	Rejected
Chase South	++	++	+	+	+	-	Further Study
Elk	+	-	-	++	-	--	Rejected
Osage	++	+	++	++	++	+	Further Study
Z-Bar	+	++	+	--	++	+	Current Study

++ Fully meets all elements of criterion
+ Minor and mitigable adverse factors
- Serious intrusions or disturbances
-- Does not and cannot meet criterion

Using the 1974-75 study criteria, the Z-Bar's natural resources are significant in that they exhibit features characteristic of the once-vast tallgrass prairie ecosystem. The Z-Bar compares favorably in terms of characteristic topography, vegetation and wildlife, scenic attributes, and opportunities for visitor enjoyment to the three sites recommended for further study in 1974-75. Range sites within the Z-Bar are, for the most part, in good to excellent condition. Exotic species are not a problem. Wildlife species are expected to be similar to those occurring on the Konza prairie. Because of its size and topography, the scenic vistas from the Z-Bar include views onto adjacent ranches. At present these views are, for the most part, enhanced, since grasslands adjoining the Z-Bar are compatible in character and devoted to seasonal livestock grazing. The major manmade-intrusion on the landscape is Kansas Highway 177. Because of rolling topography, the highway itself is not easily visible even from higher elevations within the ranch. Only 3% of the Z-Bar Ranch (mostly east of Highway 177) is used for crop production.

The Z-Bar is smaller in size than those sites previously studied. The 1974-75 sites recommended for further study: Wabaunsee West (24,282 hectares - 60,000 acres), Chase South (40,470 hectares - 100,000 acres) and Osage (37,637 hectares - 93,000 acres) averaged approximately 33,995 hectares (84,000 acres), much larger than the 4,409 hectare (10,894 acre) Z-Bar Ranch. The relative size of the Z-Bar is further reduced by Kansas Highway 177 which bisects the southern one-half of the ranch. The Z-Bar appears to be below the minimum size acceptable to maintain reintroduced, free-ranging herbivores, such as bison and elk (Figure 5). Reintroduced herbivores would require intensive management (i.e., herd culling, fencing, and additional reintroductions to maintain genetic diversity). The large historic predators (i.e., grizzly bear and wolf) cannot be feasibly reintroduced; however, their impact can be simulated by human culling of herds of reintroduced herbivores.

There are no permanent streams with headwaters inside the study area. The main drainageway, Fox Creek, originates several miles to the north in Morris County. Palmer Creek, a branch of Fox Creek, drains the northern portion of the ranch. A combination of these factors led to the low rating under criterion 4.

Tallgrass Prairie Size

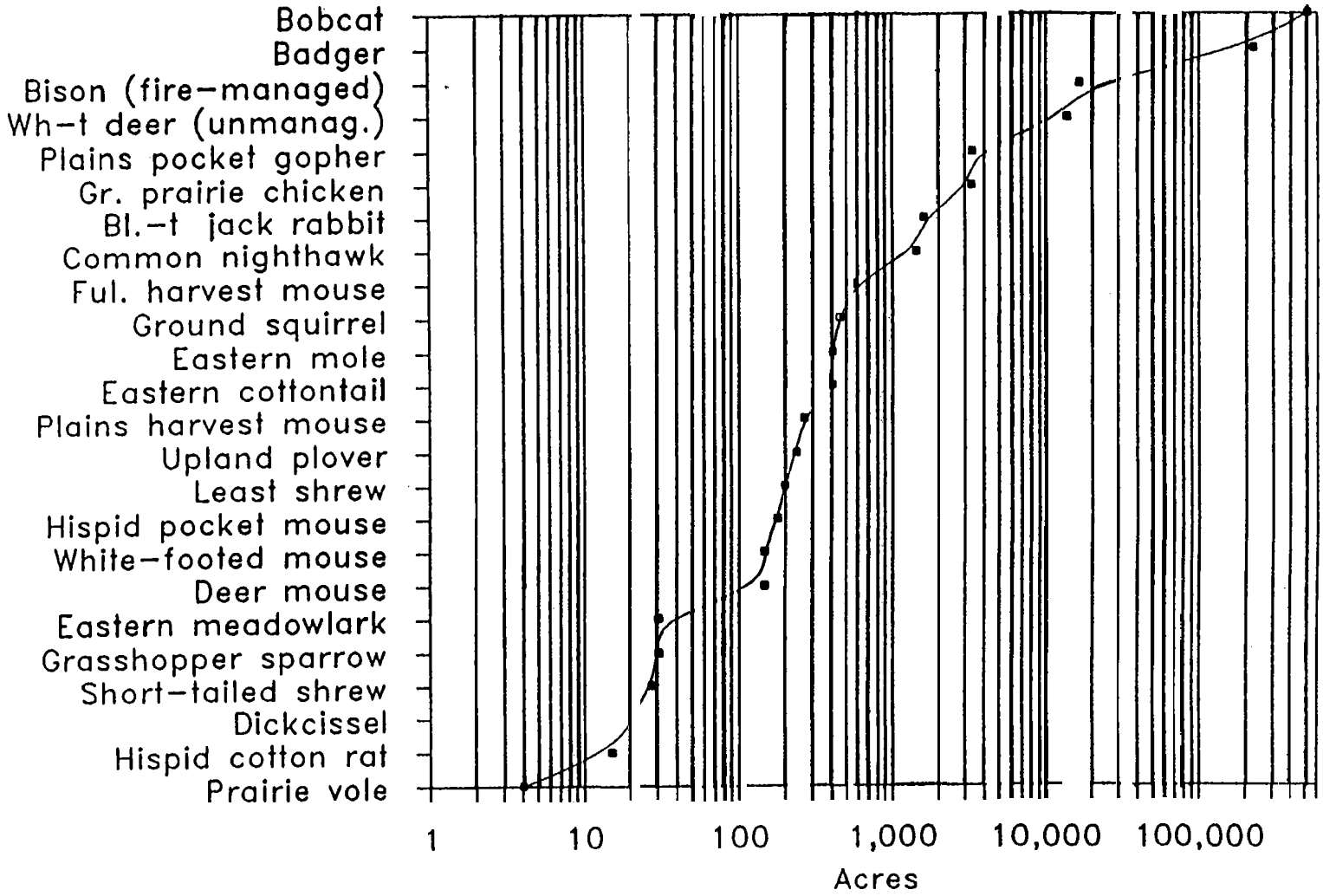


FIGURE 5: Minimum ecosystem size for tallgrass prairie (Source: Oklahoma Natural Heritage Inventory)

Present Condition

Besides determining the illustrative character of the Z-Bar in relation to previously studied sites, the present study determined and evaluated the existing range condition. Determining range condition is an established technique for estimating the successional stage or general health of the vegetation.

Range sites are distinctive kinds of rangeland, each of which produces significantly different kinds and amounts of forage or differs in the kind of management needed. On natural grasslands, maximum sustained production is obtained from mature vegetation on a range site when it is in climax condition. The native vegetation of Chase County has been classified into nine major range sites. Six of these range sites occur on the Z-Bar (Table 2).

Table 2. Range Sites, Z-Bar Ranch, and Chase County

Range Sites in Chase County	Z-Bar Ranch
Breaks	x
Claypan	x
Clay Lowland	
Clay Upland	x
Flint Ridge	
Limey Upland	
Loamy Lowland	x
Loamy Upland	x
Shallow Limey	x

Range condition is defined as the present state of the vegetation as measured against the highest stage of plant growth, or climax vegetation that the site is capable of producing. Four range condition classes are recognized in determining range condition. They are: Excellent: 76-100% climax condition, Good: 51 - 76%, Fair: 26-50%, and Poor: 0-25%.

Range condition is determined by classifying the plants (both grasses and forbs) that grow on each range site and estimating their relative abundance. The plants are classified by grouping them into three (3) categories: decreasers, increasers, and invaders. A range site near climax condition, has vegetation that is made up primarily of decreasers (species that decrease in density under continued grazing) and some increasers. In late June 1990, Soil Conservation Service (SCS) and NPS personnel sampled several representative range sites on the Z-Bar to produce a range condition map. Range conditions for the Z-Bar are shown in Table 3. Table 3 also shows acreages in cropland, pasture and wildlife habitat (i.e., riparian woodland).

Most (80%) of the range sites within the Z-Bar are in good or excellent condition. A very small area (<1%) is in poor condition. Only about 368 acres are being used for crop production. Range condition for the Z-Bar was previously assessed by the SCS in 1960. A comparison of 1990 data with that collected in 1960 revealed a significant positive trend in range condition improvement over the past 30 years.

Table 3. Range Condition, Z-Bar Ranch, June 1990

Land Use	Range Condition	Acres	%
Rangeland	Excellent	1,527	14
Rangeland	Good	7,125	66
Rangeland	Fair	1,520	14
Rangeland	Poor	7	< 1
Cropland	-	368	3
Pasture	-	153	1
Wildlife	-	172	2
TOTAL		10,872 *	100

* 22 acres (est.) are devoted to buildings, roads, improvements, and other uses bringing ranch total to 10,894 acres.

Secondary Criteria

Guidelines for studies of potential NNL's also provide that three secondary criteria (i.e., diversity, rarity and scientific/educational value) relating to other significant features or qualities found in the study area be evaluated.

The study area does not possess any outstanding examples of "other" ecological or geological features. The tallgrass prairie ecosystem, although diverse, contains few endemic species which are typically classified as rare or become endangered. The Z-Bar does not provide quality habitat for rare, threatened, or endangered species. The Z-Bar has value as a site for science, education, and on-site research. Kansas State University's Konza Prairie Research Natural Area, a 3,480 hectare (8,600 acre) tract located about 56 kilometers (35 miles) north has similar qualities and a long history of on site research. Possibilities exist for coordinated or complimentary studies. Opportunities for public education regarding the tallgrass prairie are unlimited.

Conclusion: Significance of the Resources

As outlined in Criteria for Parklands (1990), nationally significant natural resources have exceptional values or qualities which illustrate or interpret the ecological or geological themes of the nation. The study area contains nationally significant natural resources based on the following:

The Kansas Flint Hills are the location of one of the few unaltered expanses of the once vast tallgrass prairie.

The tallgrass prairie resources in the study area represent a true and essentially unspoiled example of North American natural history. Tallgrass prairie once covered nearly 400,000 square miles of the North American continent. Significance of the Z-Bar's tallgrass prairie resources relates to Theme 25 - Grassland as outlined in Natural History in the National Park System and on the National Registry of Natural Landmarks.

The tallgrass prairie is considered of prime significance for inclusion according to this theme plan; yet this ecosystem is very under represented in the National Park System.

The Z-Bar Ranch's grasslands are diverse, representative of the tallgrass prairie ecosystem, have been minimally impacted, and are in good to excellent condition.

The Z-Bar Ranch's wildlife resources are expected to be similar to and as representative of the tallgrass prairie as those indigenous to Kansas State University's Konza Research Area, several miles north. The Z-Bar

appears to be below the minimum size acceptable to reintroduce free-ranging herbivores, such as bison and elk. These species could, however, be introduced and maintained through intensive, human management.

The Z-Bar compares very favorably in terms of characteristic topography, vegetation and wildlife, scenic attributes, and opportunities for visitor enjoyment to the three sites found significant and recommended for further evaluation in the 1974-75 NPS study.

Possibilities exist for on site research; coordinated with or complimenting studies at nearby Kansas State University. Opportunities for public education and interpretation regarding the tallgrass prairie are unlimited.

The area possesses outstanding scenic values.

Nationally significant cultural areas may include districts, sites, structures, or objects that possess exceptional value or quality in illustrating or interpreting our heritage and that possess a high degree of integrity of location, design, setting, materials, workmanship, feeling and association.

The Z-Bar Ranch depicts a historic theme which is not adequately represented elsewhere in the National Park or the National Historic Landmark System. As outlined in History and Prehistory in the National Park System and the National Historic Landmark Program; Theme X - Westward Expansion, 1763-1898 and the "Ranches" facet of subtheme G, the "Cattlemen's Empire" is very under-represented in the National Park System, particularly in the Southern Plains. The "Cattlemen's Empire" subtheme is concerned with the history of the cattle industry in the Great Plains and is a major aspect in the history of the Flint Hills. The Z-Bar is an outstanding example of the "Ranches" facet which discusses the evolution of the enclosed holdings of large cattle companies during the latter half of the 19th Century.

The historical significance of the study area is also directly related to several other themes which are under represented in History and Prehistory in the National Park System and the National Historic Landmark Program. The historic structures represent a blending of unique 19th Century architectural styles, which are representative of Theme XVI - Architecture. The Fox Creek Schoolhouse and the development of education on the Kansas frontier relates to Theme XXVII - Education.

Opportunities exist for public education and interpretation regarding the history of ranching on the Kansas frontier and the other historic themes represented.

The Z-Bar Ranch is available for purchase and may represent a timely opportunity to include a significant segment of the tallgrass prairie (along with its important cultural resources) within the National Park System.

IV. SUITABILITY/FEASIBILITY

NPS Management Policies (1988) and Criteria for Parklands (1990) outline the National Park Service's standards for resource evaluation, suitability, and feasibility. A proposed area is considered suitable for addition to the National Park System if it "represents a natural or cultural theme . . . that is not already adequately represented . . . ." To be feasible, "an area must be of sufficient size and appropriate configuration, considering natural systems or historic settings to ensure long-term protection of resources and to accommodate public use, and it must have potential for efficient administration at a reasonable cost."

Suitability

The NPS has had a long-standing interest in identifying and adding a significant tallgrass prairie unit to the National Park System. In 1972, authors of the National Park System Plan, Part II - Natural History, stated "very few patches of Tallgrass Prairie remain today because the productive land is being utilized for agriculture. This vegetation type will disappear if measures are not taken soon to preserve a segment of it."

Several potential sites have, from time to time, been evaluated or proposed as parks. In 1974, the NPS undertook a major analysis of potential sites for a Tallgrass Prairie National Park. Efforts were concentrated in the states of Kansas and Oklahoma. This study evaluated seven sites in the Flint Hills region and narrowed the focus of the evaluation to three primary sites which were most desirable for designation as a National Park System unit. These three areas, which were evaluated in substantial detail, were the Osage Hills area of Oklahoma and the Chase and Wabaunsee areas in the Flint Hills of Kansas. No specific legislative action resulted from this report (completed in 1979) from the Secretary of the Interior to Congress.

A 1982 NPS-sponsored survey of prairie resources in 32 Great Plains NPS units found only 1,260 hectares (3,113 acres) of tallgrass prairie in 12 highly scattered units. Most parks with tallgrass prairie are small historic sites established primarily to preserve cultural resources or to commemorate historic subjects or events.

Efforts to establish a prairie park or preserve have been considered in Oklahoma. In 1987, a study was conducted in Osage County by the National Park Service's Southwest Regional Office. This study concentrated on "potential boundary configurations, resources management concerns, and the manner in which the National Park Service might manage and develop a national preserve in Osage County established to preserve a remnant of the once extensive tallgrass prairie ecosystem." Although the 1987 study identified several alternative boundary configurations to adequately preserve and protect areas containing significant examples of the tallgrass prairie ecosystem, no action has ensued.

As of the date of this report, no area containing a "suitable segment" of the tallgrass prairie ecosystem has been authorized for inclusion within the National Park System. National Natural Landmarks (NNL's) within the Great Plains and Central Lowlands physiographic regions which typify the "Grassland" theme and contain extensive segments of the tallgrass prairie ecosystem are under-represented.

The Z-Bar Ranch embodies a significant representation of the tallgrass prairie ecosystem. Prairie resources were determined to be in excellent condition and represent a superlative example of the Grassland theme.

The Z-Bar Ranch depicts significant historic and architectural themes which are not adequately represented elsewhere in the National Park or the National Historic Landmark System. The ranch contains several structures listed on the National Register of Historic Places.

Nationwide, the National Park Service administers several areas which contain cultural resources related to the "Ranches" facet of the "Westward Expansion" theme and "Cattlemen's Frontier" subtheme. Among these areas are: Bighorn Canyon National Recreation Area (the Mason-Lovell Ranch) in Montana and Wyoming; Grant-Kohrs Ranch National Historic Site, Montana; Lyndon B. Johnson National Historical Park, Texas; and Theodore Roosevelt National Park, North Dakota. Several ranches including one each in South Dakota, Montana, California and Oklahoma, and two each in Texas, Arizona, and Wyoming have been designated as National Historic Landmarks. A brief description of existing NHL's related to the "Ranches" facet follows:

Frawley Ranch (South Dakota) - This ranch represents the development of practical land use for an area unsuited to homestead farming. Henry J. Frawley acquired several unsuccessful homestead farms to create a large and prosperous ranch in the late 19th Century, c.a. 1876.

Grant-Kohrs Ranch (Montana) - John Grant, the original owner of the ranch, is sometimes credited with founding the ranch cattle industry in Montana. Conrad Kohrs, who bought the ranch about 1866, was among the foremost "cattle kings" of his era. This ranch is part of the National Park System.

Los Alamos Ranch House (California) - A good example of a Spanish-Mexican hacienda. It was popular overnight stopping place on the main Santa Barbara-Monterey Road, c.a. 1840.

101 Ranch Historic District (Oklahoma) - A large cattle ranch and home base of the 101 Wild West Show (c.a. 1879) which featured Bill Pickett, a well-known Black cowboy who invented steer wrestling and was elected to the Cowboy Hall of Fame.

JA Ranch (Texas) - Charles Goodnight, manager of the JA Ranch (1879-89), a pioneer cattleman, and the first rancher in the Texas Panhandle, is recognized for his scientific cattle breeding.

King Ranch (Texas) - The King Ranch was founded by Richard King, c.a. 1852, on what was a 75,000 acre Spanish land grant. It is now the largest ranch in the nation, covering more than a million acres. San Bernardino Ranch (Arizona) - Illustrates the continuity of Spanish and American cattle ranching during the early 1800's in the Southwest.

Sierra Bonita Ranch (Arizona) - First Anglo-American cattle ranch in Arizona to survive Apache attacks (c.a. 1872). Fort-like, it helped open the grasslands of Arizona to European-American settlers.

Tom Sun Ranch (Wyoming) - Typifies the medium-sized ranching operation of the open ranch period, c.a. 1872.

Swan Land and Cattle Company Headquarters (Wyoming) - Organized in Scotland, this company was one of the foreign concerns that flourished in the West (c.a. 1883) when the ranch cattle industry was profitable.

Z-Bar illustrates the consolidation of a large enclosed cattle operation in the Kansas Flint Hills. From the comparative analysis above, it is apparent that the Z-Bar does not duplicate any of the exising NHL's in this facet of the "Cattlement's Empire" theme, in geographic locality, or in physiographic setting. None of the other NHL's are located in the tallgrass prairie biome.

No native limestone Second Empire structures are preserved with the National Park System. A listing of designated NHL's includes twenty-one Second Empire structures, constructed for a variety of (mostly public) purposes in thirteen states. Buildings exhibiting this architectural style range from the Library of Congress in Washington D.C., to Deady and Villard Halls at the University of Oregon in Eugene. No Second Empire ranch house, farm building or residence is designated a NHL, nor are any situated in the Great Plains.

Based on these factors, this study concludes that the Z-Bar Ranch is suitable for inclusion in the National Park System as it depicts significant natural history, architectural, and historic themes which are not adequately represented elsewhere.

Feasibility

The study area is currently in private ownership and available for purchase. The existing boundary is of sufficient size and configuration to afford adequate resource protection and provide sites for visitor facilities with minimal intrusion on the landscape. A larger area could ensure the protection and restoration of a more diverse ecosystem and facilitate the reintroduction of large ungulate and predator species as components. In terms of long-term maintenance of biological diversity, including large mammal viability and the protectability of the area's biota, a smaller area is usually a poor substitute for a larger one. More intense human management could alleviate the size issue somewhat. From a professional viewpoint, it might be desirable

to consider a larger area should contiguous lands become available for donation or for purchase on a "willing seller" basis. The historic ranch house and related outbuildings have been well maintained and could provide a focal point for both natural and historic interpretation.

Adjoining lands are expected to remain in private ownership and be devoted to beef cattle production for the foreseeable future. Current adjacent uses are compatible with and enhance scenic values found on the Z-Bar. Vistas from the Z-Bar provide visitors with a feeling for the expansiveness of the historic and once vast tallgrass prairie. Adjacent land use patterns could change, and residential, commercial or industrial development ensue. A park or preserve on the Z-Bar Ranch may not always to be able to rely on zones of similar habitat outside its boundaries to supplement, in an ecological sense, its current size.

Administration of the area by the NPS, other Federal, or state land managing agency would require personnel and facilities to provide for visitor use, interpretation, research, maintenance and resource management. A decision to reintroduce extirpated native wildlife species could require the installation and maintenance of extensive boundary fencing.

The lack of an internal road system and absence of existing facilities would limit the immediate possibilities for visitor use. This limitation is compounded by the lack of a sufficient visitor services infrastructure in the surrounding area. The need for improved access, roads, and visitor facilities would depend, to a large extent, on the management objectives developed for the area. Costs associated with land acquisition, access, and facility development would be substantial. Stabilization and necessary preservation maintenance for several historic structures located on the ranch will be costly.

V. STUDY OF ALTERNATIVES

The Study of Alternatives was limited to the Z-Bar Ranch and is based on information contained in the Study of Significance. The study team developed and assessed several alternative strategies for the management, preservation, and use of the Z-Bar Ranch and its resources. Relative cost estimates and an analysis of the potential impacts of each alternative were developed. Compliance with the National Environmental Policy Act (NEPA) is not required since no Federal action is proposed or specifically recommended.

The strategy employed in the Study of Alternatives was to prepare a set of management objectives which address protection of the site's resources, provide for interpretation and visitor use, and consider issues raised by the public during the study. Each alternative was then evaluated on the basis of its ability to meet these objectives.

Management Objectives

1. Protect and interpret significant natural resources.

2. Protect and interpret significant cultural resources.

3. Protect and maintain scenic quality.

4. Minimize impact of Government influence on private lands.

5. Contribute to local, regional, and state economy.

6. Provide reasonable access and development for visitor use and enjoyment.

Summary of Alternatives

The Study of Alternatives identifies five alternatives under which the NPS believes the ranch could be managed. These alternatives range from no Federal action to the creation of a National Park System unit to encompass the existing Z-Bar Ranch in its entirety.

Each alternative briefly describes how management and operations would be accomplished; how the resources would be managed and interpreted for visitors; what future development might be undertaken; potential economic, cultural, and environmental impacts; and what estimated costs would be. A comparison of the relative strengths and weaknesses of each alternative in meeting the management objectives is found in Appendix E.

This report is not intended to present detailed alternatives for operations, management, development, interpretation, or preservation. If legislation were enacted, a comprehensive planning process would ensue. An opportunity for future public involvement and input would be provided. Park operations, management, and development would be addressed in the form of a General Management Plan. Likewise, details of how to present information on prairie ecology and the history of cattle ranching in the Flint Hills would be described in an Interpretive Prospectus. The management of natural and cultural resources would be addressed in a Resource Management Plan. Protection of scenic values and boundary concerns would be addressed in a Land Protection Plan. All documents would be initiated following legislation.

The alternatives identified within the study are: A. No Action; B. Flint Hills/Z-Bar Ranch National Historic Site; C. Flint Hills Prairie National Monument; D. Protection of the Z-Bar Ranch by State or Local Government Agency; and, E. Private Conservation Organization Reserve.

ALTERNATIVE A: NO ACTION

Description

Implementation of this alternative assumes the Z-Bar Ranch would remain in private ownership. The current owner would retain the option to continue existing land use practices, sell the property, or convert it to other uses. This is the no-action alternative.

Management and Operations

Under this alternative, retention or sale of the Z-Bar, for livestock operations or other purposes, would remain the prerogative of the Trust Department of Boatmen's First National Bank of Kansas City, Missouri. In the short-term, on site management of seasonal cattle grazing operations would remain vested in a resident foreman.

Resource Management

The Z-Bar's grasslands would probably continue to be managed for beef cattle production. Stocking on a seasonal basis and periodic use of prescribed fire to maintain optimum range condition would continue.

Historic structures would probably continue to be maintained for residential and business uses.

Interpretation and Visitor Use

No interpretation of significant historic or natural resources would occur. Visitor use would be limited to exterior views of the grasslands and the several historic structures from the Kansas Highway 177 right-of-way.

Development

No public access would be accommodated and no development would be undertaken under this alternative.

Impacts

No property would be removed from the county tax rolls.

Expanded economic opportunities resulting from increased tourism following NPS designation would not occur.

Constraints on private funding could limit stabilization and maintenance of the ranch's historic structures.

A significant segment of the tallgrass prairie ecosystem would not be preserved for public use and education.

Cost Estimate

Private funds would be used to manage the grasslands and maintain the historic structures. The historic structures might be eligible for financial assistance and tax credits. No Federal funds would be expended under this alternative.

ALTERNATIVE B: Flint Hills/Z-Bar Ranch National Historic Site

Description

Implementation of this alternative would assume the Congress authorized the Z-Bar Ranch as a national historic site under the administration of the National Park Service. The Service's mission would be to preserve and protect the significant historic structures in the ranch headquarters complex and a representative portion of the ranch's tallgrass prairie. The NPS would acquire approximately 4,000 to 5,000 acres of the existing ranch property through direct purchase or donation (Figure 6). The ranch headquarters' historic structures are located in Section 6 of Township 19S, Range 8E, 6th Principal Meridian. All or portions of seven contiguous additional sections, both east and west of Kansas Highway 177, would be considered for acquisition. The main reason for an area of this size would be to preserve known significant cultural resources; adequately preserve an identifiable expanse of tallgrass prairie; allow for efficient management of the historic site; and, provide and preserve views of tallgrass prairie from the historic ranch headquarters area.

Management and Operations

The NPS would manage the area to place primary emphasis on the preservation and appropriate use of its significant cultural and natural resources. On-site site management would be under the direction of a Park Manager (Superintendent) who would supervise a small operational staff composed of administrative, protection, interpretive, resource management, and maintenance personnel.

Resource Management

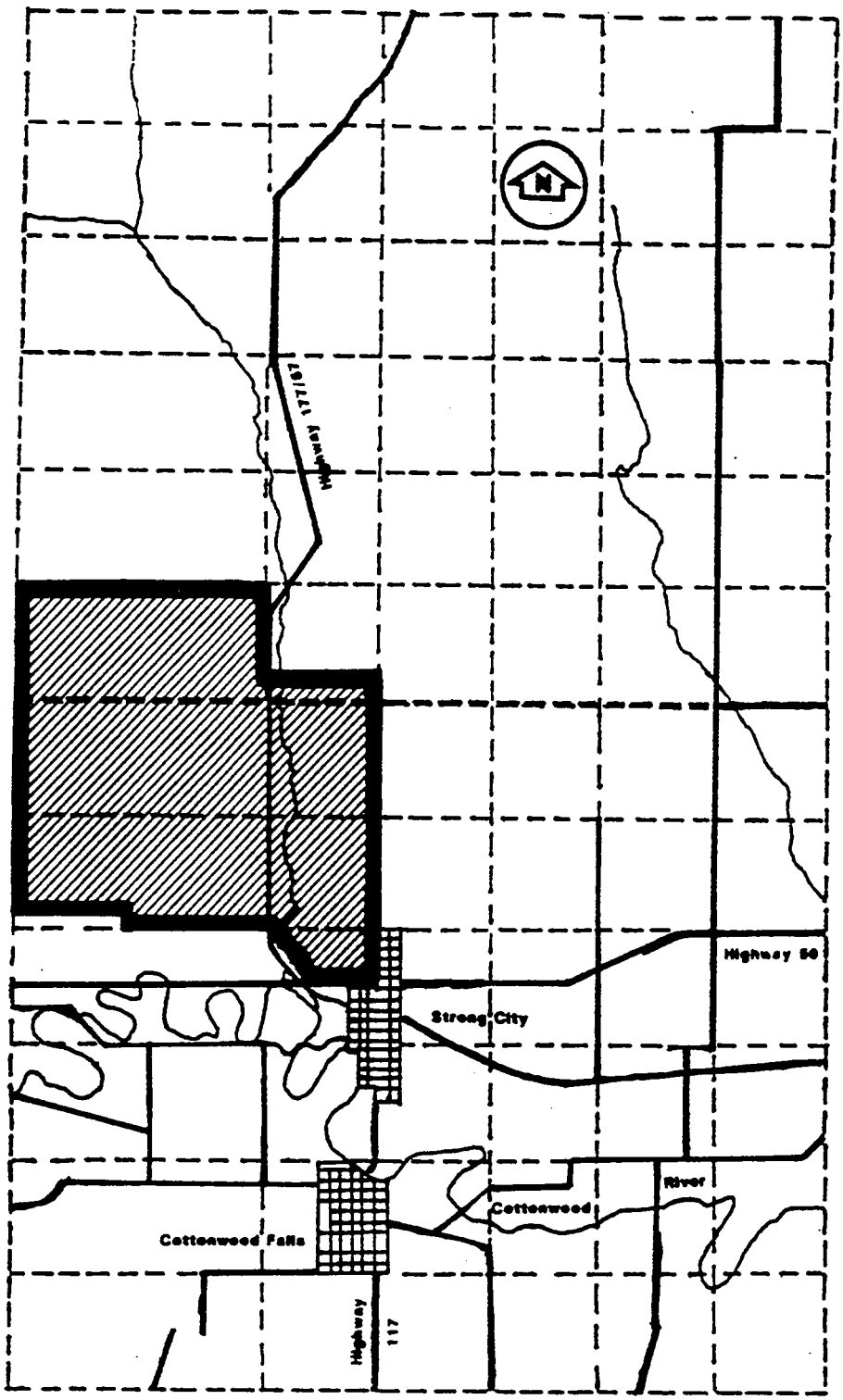
A complete identification and inventory of all archeological, cultural, and natural resources would be conducted. Initial management strategies would evolve around efforts to protect and preserve identified resources.

The Z-Bar's grasslands would be managed as an example of the original tallgrass prairie ecosystem. A small portion of the ranch, within eyesight of the ranch headquarters complex, could be considered for continued grazing of an appropriate number of livestock under a lease arrangement. There would be no reintroduction of native herbivores. Historic structures would be initially stabilized with preservation and rehabilitation as long-term management goals. The ranch headquarters complex and the schoolhouse would be restored to a predetermined historic period for interpretive purposes. Efforts to identify, preserve and protect other significant cultural resources would be initiated.

Interpretation and Visitor Use

Interpretation of significant historic and natural resources would occur. Interpretive services and visitor use would be coordinated to promote an understanding of historic ranching in the Flint Hills region and a remnant of the tallgrass prairie ecosystem. Interpretive activities might include exhibits, publications, audio/visual programs, walking tours and formal presentations.

Figure 6



FLINT HILLS/Z-BAR NATIONAL HISTORIC SITE

Visitation could range from 10,000 to 60,000 persons per year depending on the level of development, public awareness, and promotion. Private sector developments to provide necessary visitor services (food, lodging, etc.) will influence levels and duration of visits.

Development

Once the national historic site was established, the NPS would prepare a General Management Plan (GMP) and initiate other appropriate planning documents to determine specific needs for the site. Public involvement would be encouraged throughout the GMP process. Facilities for interpretation and visitor use, administrative, and maintenance services would be among the initial considerations. Construction of access roads, visitor parking facilities and trails would be considered.

Impacts

NPS ownership would remove the property from the county tax rolls. Congress has provided legislation that authorizes payments-in-lieu-of-taxes be made to the appropriate political subdivision to partially offset this loss in revenue.

The surrounding area would experience some economic benefits associated with increased tourism and local Federal Government spending. NPS designation of the area would increase tourism drawing power.

If increased tourism did occur, the demand for local services (i.e., water, sewer, highway repair/maintenance) could be affected, thus requiring some upgrading of these services.

Stabilization and maintenance of the several National Register properties would occur.

The site's grasslands would not be fully representative of the tallgrass prairie ecosystem due to its small size relative to natural pre-settlement conditions. Some native plants and animals may not be adequately preserved or represented. An example of a portion of the tallgrass prairie ecosystem would be preserved for public use and education. Visitors could gain a basic appreciation and understanding of the area's resources and the role of the tallgrass prairie in the broader context of United States history, but find it difficult to gain a full appreciation of the biological complexity and historic magnitude of the prairie.

The periodic use of prescribed fire could be limited due to area size and constraints implied by the proximity of significant cultural resources.

The identification of currently unknown cultural resources could lead to their protection and preservation for future generations to appreciate.

Unless the Federal Government purchases the mineral rights on the property, oil and gas production could be permitted within the national historic site where valid mineral rights exist.

Cost Estimate

In order to implement this option, Congress would need to appropriate to the NPS $4 to $6 million dollars for land acquisition and development, and $250,000 to $350,000 annually for operations and maintenance. Immediate stabilization needs for the ranch's historic structures is estimated at approximately $55,000.

ALTERNATIVE C: Flint Hills Prairie National Monument

Description

Implementation of this alternative would assume the Congress authorized the Z-Bar Ranch as a national monument under the administration of the National Park Service. The Service would acquire the entire 10,894 acre ranch through direct purchase or donation (Figure 7).

Management and Operations

The NPS would manage the area to place primary emphasis on the preservation and appropriate use of its significant natural and cultural resources. On-site management would be under the direction of a Park Manager (Superintendent) who would supervise an operational staff composed of administrative, interpretive, protection, resource management, and maintenance personnel.

Resource Management

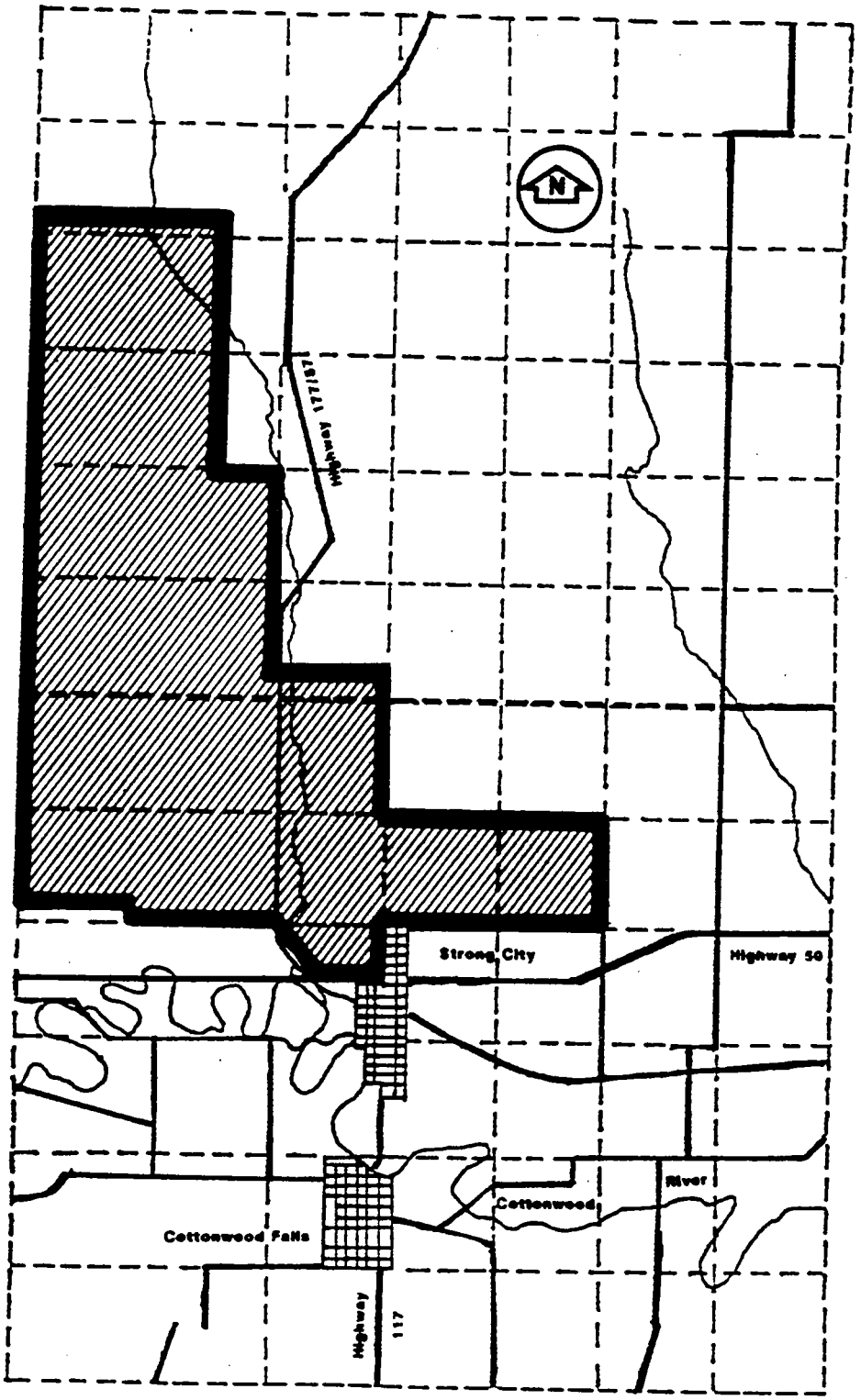
A complete identification and inventory of all archeological, cultural, and natural resources would be conducted. Initial management strategies would evolve around efforts to protect and preserve identified resources.

The Z-Bar's grasslands would be managed as a segment of the tallgrass prairie ecosystem. The periodic use of prescribed fire would continue as one of a variety of possible tools needed to maintain and enhance prairie resources. A portion of the ranch could be considered for continued livestock grazing under a lease arrangement. The feasibility of reintroducing native herbivores would be investigated. Historic structures would be initially stabilized with preservation and rehabilitation as long-term management goals. The ranch headquarters complex and the schoolhouse could be restored to a predetermined historic period for interpretive purposes. Efforts would be undertaken to preserve and protect other significant cultural resources including prehistoric and historic period archeological sites and materials.

Interpretation and Visitor Use

Interpretation of nationally significant natural and historic resources would occur. Interpretive services and visitor use would be coordinated to promote an understanding of the tallgrass prairie ecosystem and historic ranching in the Flint Hills region. As examples, interpretive activities might include publications, exhibits, audio/visual programs, walking tours, and formal presentations. Visitation could range from 60,000 to 100,000 persons per year depending on the level of development, public awareness and promotion. Private sector developments to provide necessary visitor services (food, lodging, etc.) will influence levels and duration of visits.

Figure 7



FLINT HILLS PRAIRIE NATIONAL MONUMENT

Development

Once the national monument was established, the NPS would prepare a General Management Plan (GMP) and initiate other appropriate planning documents to determine specific needs for the site. Public involvement would be encouraged throughout the GMP process. Facilities for interpretation and visitor use, administrative, and maintenance services would be among the initial considerations. An expanded system of access roads, visitor parking areas, and trails would be considered.

Impacts

NPS ownership would remove the property from the county tax rolls. Payments-in-lieu-of-taxes would be made to partially offset this loss in revenue.

Expanded economic development in the surrounding area associated with increased tourism and local Federal Government spending would occur. NPS designation of the area would further increase tourism drawing power.

If increased tourism did occur, the demand for local services (i.e., water, sewer, highway repair/maintenance) could be affected, thus requiring some upgrading of these services.

Stabilization and maintenance of the several National Register properties would occur.

A significant segment of the tallgrass prairie ecosystem would be preserved for public use and education. Visitors could gain an in-depth appreciation and understanding of the area's resources and the role of the tallgrass prairie in the broader context of United States history.

The identification of currently unknown cultural resources could lead to their protection and preservation for future generations to appreciate.

Unless the Federal Government purchases the mineral rights on the property, oil and gas production could be permitted within the national monument where valid mineral rights exist.

Cost Estimate

In order to implement this option, Congress would need to appropriate to the NPS approximately $6 to $8 million dollars for land acquisition and development, and $450,000 to $750,000 annually for operations and maintenance. Immediate stabilization needs for the ranch's historic structures is estimated at approximately $55,000.

ALTERNATIVE D: Protection of the Z-Bar Ranch by a State or Local Government Agency

Description

Implementation of this alternative would designate the Z-Bar Ranch as a park under the administration of a state or local government entity. The designated agency would acquire the entire 10, 894 acre ranch through direct purchase or donation.

Management and Operations

The designated agency would manage the area to place primary emphasis on the preservation and appropriate use of its natural and cultural resources. On site management would be under the direction of a Manager who would supervise an operational staff composed of administrative, interpretive, protection, resource management, and maintenance personnel.

Resource Management

A complete inventory of all cultural and natural resources would be conducted with efforts made to protect and preserve them.

The Z-Bar's grasslands would be managed as a segment of the tallgrass prairie ecosystem. The periodic use of prescribed fire might continue as one of a variety of possible tools needed to maintain and enhance prairie resources. A portion of the ranch could be considered for continued livestock grazing under a lease arrangement. Historic structures would be stabilized with preservation as a long-term management goal. The ranch headquarters buildings and the schoolhouse could be converted to adaptive or administrative uses or restored to a predetermined historic period for interpretive purposes. Efforts may be considered to preserve and protect other significant cultural resources including prehistoric and historic period archeological sites and materials.

Interpretation and Visitor Use

Interpretation of natural and historic resources would occur. Interpretive services and visitor use could be coordinated to promote an understanding of the tallgrass prairie ecosystem and historic ranching in the Flint Hills region. As examples, interpretive activities might include publications, exhibits, audio/visual programs, walking tours, and formal presentations. Visitation could range from 40,000 to 200,000 persons per year depending on the level of development, public awareness, and promotion. Private sector developments to provide necessary visitor services (food, lodging, etc.) will influence levels and duration of visits.

Development

Once the park was established, the administering agency would prepare appropriate planning documents to determine specific needs for the site. Facilities for visitor, administrative and maintenance services, and roads and trails would be among the considerations.

Impacts

State or local government ownership would remove the property from the county tax rolls. Payments could be made to partially offset this loss in revenue.

Expanded economic development in the surrounding area associated with increased tourism and government spending would occur.

If there was increased tourism to the area, local services (i.e., water, sewer, highway repair/maintenance) could be affected, thus requiring some upgrading of these services.

Stabilization and maintenance of the several National Register properties would occur.

A segment of the tallgrass prairie ecosystem would be preserved for public use and education. Visitors could gain an in-depth appreciation and understanding of the area's resources and the role of the tallgrass prairie in the broader context of state or local history.

The possible identification of currently unknown cultural resources could lead to their protection and preservation for future generations to appreciate.

Unless the Government purchases the mineral rights on the property, oil and gas production would be permitted where valid mineral rights exist.

Cost Estimate

In order to implement this option, the state or local government would need to appropriate up to $6 million dollars for land acquisition and development, and $200,000 to $400,000 annually for operations and maintenance. Immediate stabilization needs for the ranch's historic structures is estimated at approximately $55,000.

ALTERNATIVE E: Private Conservation Organization Reserve.

Description

Implementation of this alternative would assume the Z-Bar Ranch property is acquired, managed, and administered as a nature reserve by a private, non-profit national conservation organization. Examples of organizations who might have potential interest include, but are not limited to: The Nature Conservancy, The National Audubon Society, The National Wildlife Federation, and the Sierra Club. The organization would acquire the entire 10,894 acre ranch through direct purchase or donation.

Management and Operations

The conservation organization would manage the area to place primary emphasis on the preservation, management, and appropriate use of its natural resources. Cultural resources on the property, such as the ranch headquarters buildings, would be stabilized to a realistic and practical extent. Historic structures would probably not be intensively managed to interpret cultural or historic significance, since that is not the organization's primary purpose. On-site management would be under the direction of a caretaker/manager who would supervise a limited operational staff composed primarily of resource management and maintenance personnel. Administrative, interpretive, or protection staff may or may not be present.

Resource Management

An inventory of all natural, and possibly cultural, resources would be completed with efforts made to protect, manage, and preserve them.

The Z-Bar's grasslands would be managed as a segment of the tallgrass prairie ecosystem. The periodic use of prescribed fire would most likely continue as one of a variety of possible tools needed to maintain and enhance prairie resources. A portion of the ranch could be considered for continued livestock grazing under a lease arrangement. Historic structures would be stabilized to the fullest extent possible with reasonable preservation as a long-term management goal. The ranch headquarters buildings and the schoolhouse could be, and most likely would be, converted to adaptive or administrative uses. Restoration to a specific historic period for interpretive purposes would be unlikely.

Interpretation and Visitor Use

Interpretation of natural resources would occur. Interpretive services and visitor use would be coordinated to promote an understanding of the tallgrass prairie ecosystem and historic ranching in the Flint Hills region. As examples, interpretive activities might include publications, exhibits, audio/visual programs, and walking tours. Visitation could range from 2,000 to 10,000 persons per year depending on the level of development, public awareness, and promotion. Private sector developments to provide necessary visitor services (food, lodging, etc.) will influence levels and duration of visits.

Development

Once the nature reserve is established, the proprietary organization would prepare a plan for managing the property and identify specific needs for the site. Minimal facilities for visitor orientation, information and education, maintenance services, and public access might be among the plan's initial considerations.

Impacts

Ownership by a private, non-profit organization would not remove the property from the county tax rolls. Taxes would continue to be paid to Chase County based on the property's assessed value.

Modest economic development in the surrounding area associated with tourism and organizational spending might occur.

If increased tourism did occur, the demand for local services (i.e., water, sewer, highway repair/maintenance) could be affected, possibly requiring some upgrading of these services beyond local standards.

Basic stabilization and maintenance of the several National Register properties would occur.

A segment of the tallgrass prairie ecosystem would be preserved for public use and education.

Interpretation of cultural or historic significance, beyond the scope of the managing organization's primary purpose, would likely not occur.

The identification of currently unknown cultural resources would not be a high priority with the proprietary organization. Protection and preservation of these resources for future generations could be jeopardized.

The organization would most likely acquire the mineral rights on the property. Recurrence of oil and gas exploration and production would likely be curtailed since the organization's primary purpose is to conserve and preserve natural resources.

Cost Estimate

In order to implement this option, a private conservation organization would need approximately $4 million dollars for land acquisition and development, and $100,000 to $200,000 annually for operations and maintenance. Immediate stabilization needs for the ranch's historic structures is estimated at approximately $55,000.

Alternatives Considered, but Not Assessed

Several alternatives suggested by the public or discussed by the study team were given consideration. Any alternative which did not correspond to the study area was not included. An alternative specifying the Z-Bar be designated either a National Historic or Natural Landmark was not pursued. Although such designation recognizes the site's national significance, it affords no real protection. Operation of the Z-Bar as a working cattle ranch, accessible to the public for tours, was suggested several times during the study process. This concept is an interpretive and recreational option common to and possible in all alternatives.

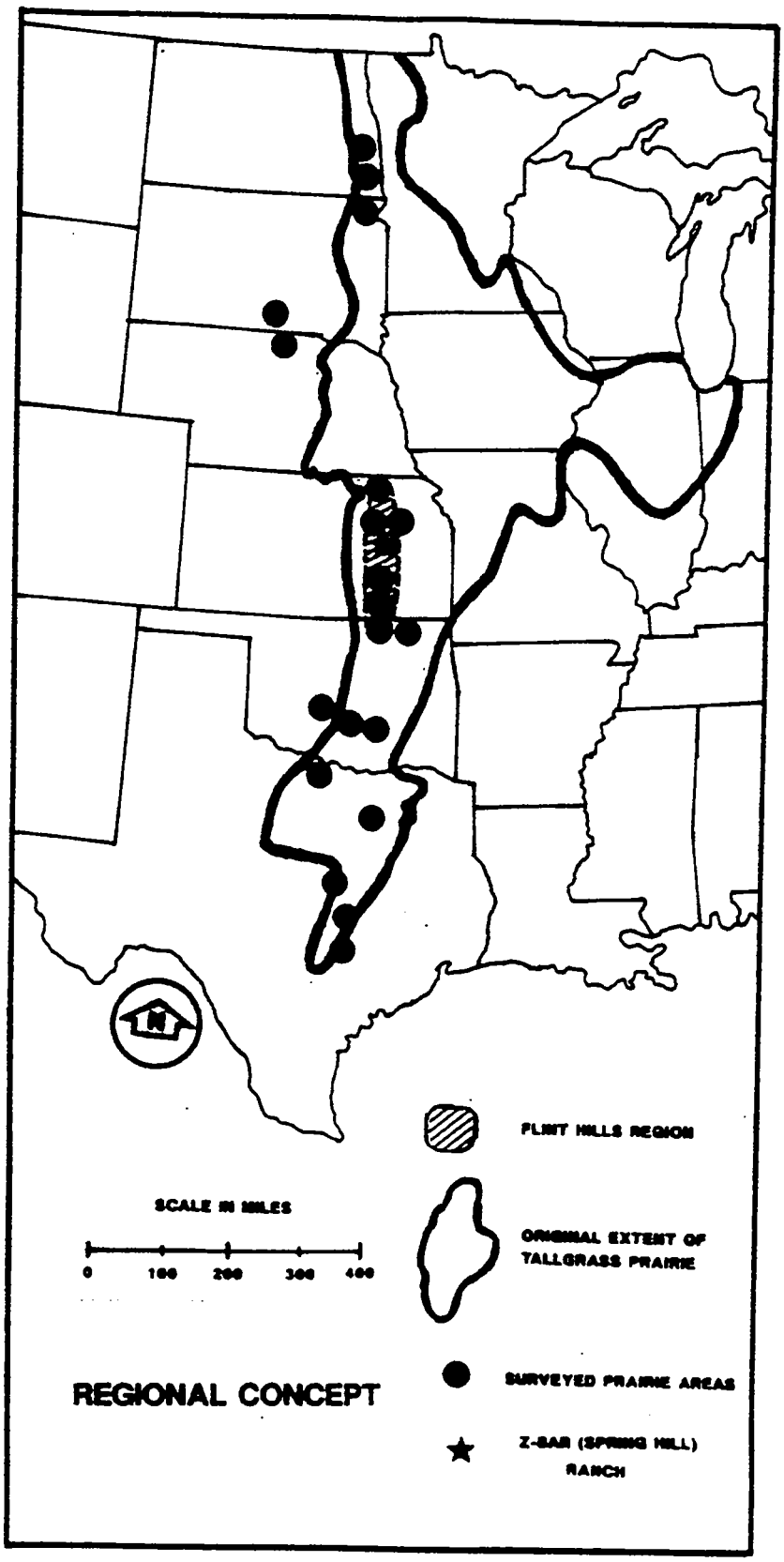
Regional Concept

One idea which emerged at several stages during the study process was a regional concept for tallgrass prairie preservation, interpretation, and use. This concept would combine the lands and efforts of the various Federal land managing agencies (National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, etc.); State land managing agencies; State University lands (such as the Konza Research Prairie); properties and preserves managed by national conservation organizations (Audubon Society, Nature Conservancy, etc.), and participating private landowners into a "string of pearls" stretching north to south through the Great Plains from the Canadian border to the Mexican border and perhaps beyond (Figure 8). These units (of unique and varying ownerships, sizes, resources, accessibility, and management purposes) could be linked by designated scenic highways, similar to the "Prairie Parkway" established by the State of Kansas. Opportunities would be provided for visitor access, interpretation, research, study, and recreation. Perhaps a series of wayside pull-offs and exhibits could be developed. Alternatively, the National Park Service or other agency could acquire a small amount of land and purchase easements, development rights, and/or architectural controls in the most critical areas. Other areas could be protected through the development of local zoning or other controls. The NPS could coordinate planning and provide technical assistance in the management, protection and interpretation of the resources throughout the region and make periodic grants. Since opportunities to preserve a representative tallgrass prairie ecosystem are limited, perhaps regional, multi-agency cooperation for research, preservation, and education is an approach whose time has come.

Conclusion

This study is meant to provide the public and interested members of the Congress with a tool for decision making. This report takes no position on which of the alternatives, if any, should be pursued. None of the options have been selected by the team as "preferred" and no statement in this report should be construed as an endorsement by the Department of the Interior or the National Park Service. Any possible future legislation could combine elements of more than one alternative. Since no Federal action is proposed, neither an Environmental Assessment nor an Environmental Impact Statement was prepared. Future NPS involvement in the study area in the form of a National Park System unit designation is subject to Congressional mandate.

Figure 8


FLINT HILLS REGION
SCALE IN MILES
0
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ORIGINAL EXTENT OF TALLGRASS PRAIRIE
REGIONAL CONCEPT
SURVEYED PRAIRIE AREAS
Z-BAR (SPRING HILL) RANCH

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Kansas Department of Wildlife and Parks
Kansas Farm Bureau
Kansas Grassroots Association
Kansas Livestock Association
Kansas State Historical Society
Kansas State University
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II. BIBLIOGRAPHY

CHASE COUNTY HISTORICAL SOCIETY

1948 Chase County Historical Sketches, Volume II.

FINCK, C. J., and D. W. KAUFMAN, G. A. KAUFMAN, S. K. GURTZ, B. K. CLARK, L. J. McCLELLAN, and B. S. CLARK

1986 Mammals of the Konza Prairie Research Natural Area, Kansas. The Prairie Naturalist, 18:153-166.

FREEMAN, C. C. and L. C. HULBURT

1985 An Annotated List of the Vascular Flora of the Konza Prairie Research Natural Area, Kansas. Transactions of the Kansas Academy of Science, 88:84-115.

HALL, CHARLES L.

1970 Spring Hill Farm and Stock Ranch House - National Register of Historic Places - Inventory Form.

HEINRICH, M. L. and D. W. KAUFMAN

1985 Herpetofauna of the Konza Prairie Research Natural Area, Kansas. The Prairie Naturalist, 17:101-112.

LAUNCHBAUGH, J. L. and C. C. OWENSBY

1978 Kansas Rangelands, their management based on a half century of research. Bulletin 622, Kansas Agricultural Experiment Station. p.56

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

1974 Soil Survey of Chase County, Kansas. Washington, D.C.

UNITED STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

1972 National Park System Plan, Part II, Natural History. Washington, D.C.

1979 Proposed Prairie National Park, Kansas, Oklahoma. Washington, D.C.

1982 Planning Process Guideline, NPS-2. Washington, D.C.

UNITED STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE (Continued)

1987 Catalog of National Historic Landmarks - 1987. Washington, D.C.

1987 History and Prehistory in the National Park System and the National Historic Landmarks Program. Washington, D.C.

1987 Tallgrass Prairie Preserve, New Area Report. Southwest Regional Office, Santa Fe, New Mexico

1988 Management Policies. Washington, D.C.

1990 Criteria for Parklands. Washington, D.C.

1990 Natural History in the National Park System and on the National Registry of Natural Landmarks, Natural Resource Report NPS/NR/NRTR-90/03, Washington, D.C.

UNITED STATES NATIONAL ARCHIVES AND RECORDS ADMINISTRATION

1990 Title 36: Code of Federal Regulations - Parks, Forests and Public Properties. Parts 1 to 199. U.S. Government Printing Office, Washington, D.C.

ZIMMERMAN, J. L.

1985 Birds of the Konza Prairie Research Natural Area, Kansas. The Prairie Naturalist, 17:185-192.

HISTORIC STRUCTURES STABILIZATION WORK SUMMARY
Z-BAR RANCH
CHASE COUNTY, KANSAS

Prepared By
Alan O'Bright, Historical Architect
National Park Service, Midwest Regional Office

A general condition inspection was performed on the Z-Bar Ranch historic stone structures on October 17, 1990. Only fabric or systems requiring immediate or timely stabilization work are noted.

A detailed inspection of roofs and electrical/mechanical systems, especially at the main house, could not be performed. A more thorough inspection of the barn by a registered structural engineer familiar with heavy timber/light framing is recommended. The interior of the Fox Creek Schoolhouse and the garage were closed and could not be examined.

Other wood frame structures at the ranch, including a metal covered shed and the wood frame house, were not inspected. It is recommended that the condition and significance of all structures on the site be further inspected and researched with respect to the history of the ranch prior to determination of treatment.

The overall condition of the stone structures is very good. It is apparent that the buildings have been maintained over the entire period of their existence. The following are condition comments for each of the structures with a treatment estimate cost:

HOUSE

The overall condition and historic integrity of the house is very good; only minor alterations have been made to the house since its construction The interior is excellent in both fabric condition and design. Required stabilization work is concentrated at the tunnel to the springhouse; porches; a metal roof over one window bay; the gutter system; and a cast iron fence at the front of the house.

Stabilization Estimate $15,500

BARN

The perimeter stone walls of the barn are in excellent condition although the addition of a contemporary bin in the interior has compromised historic and structural integrity to some extent. The roof structure exhibits some evidence

of stress and areas of the floor framing system are distressed. It is highly recommended that the barn be examined by a qualified engineer to determine structural soundness. Fabric stabilization will be required for the electrical system; windows; doors; and the ramp deck to the loft.

Stabilization Estimate $23,000

SPRINGHOUSE/SMOKEHOUSE

This stone structure features a smokehouse above and a springhouse below joined to the main house via a tunnel. The structure is in very good condition and integrity. The roof and cupola have been replaced. No immediate stabilization work is required.

Stabilization Estimate $0

OUTHOUSE

The outhouse is in very good condition and integrity. Stabilization work is required at the windows; door; and interior floor boards.

Stabilization Estimate $800

WORKSHOP

The twenty foot square workshop is in good condition and integrity overall. The condition of a sub-grade stone water reservoir at the east elevation of the workshop is unknown. Past modifications include the removal of a cupola and addition of a concrete floor. Stabilization work is recommended for the loft framing, windows, the door, and the electrical system. The propane heating and electrical systems should be disconnected for safety reasons.

Stabilization Estimate $1,000

POULTRY HOUSE/FUEL STORAGE

This structure is banked into a hillside and features a sod-covered stone barrel vault. The walls and vault appear to be in good condition, but it is recommended that the building be examined by a structural engineer. The fuel storage room has had many spills; the oil-laden soil and storage tanks will have to be excavated to prevent further contamination of ground water. Stabilization work is required at windows; doors; and construction of missing cupolas.

Stabilization Estimate (not including fuel spill abatement) $2,100

EQUIPMENT SHED

The equipment shed is structurally attached to the west elevation of the poultry house. The shed features a banked and a wood pole and frame shed roof. The structure is in stable condition although minor pointing and siding replacement is required.

Stabilization Estimate $900

GARAGE

The condition of the banked stone garage is fair to good. Most stabilization work is needed on the roof, gutters, window repairs and repointing at the east elevation. The interior was not accessible and its condition is unknown.

Stabilization Estimate $1,600

FOX CREEK SCHOOLHOUSE

The schoolhouse was restored by a community organization in the 1970's. The exterior integrity is very good and the condition fair to good. The exterior stone walls require extensive repointing and spot repair. Windows and doors are in need of repair and general maintenance. The interior was not accessible for inspection.

Stabilization Estimate $9,500

STONE FENCES

The ranch contains thousands of lineal feet of dry-laid stone fence. Although the fences were not inspected, it is assumed that portions will require repair or rebuilding if the decision is made to continue livestock grazing.

Repair Work ($/square foot of exposed face area) $10

TOTAL STABILIZATION ESTIMATE $54,400

(Excluding fuel spill abatement and fence repair)

APPENDIX B

ECONOMIC IMPACT ANALYSIS

TALLGRASS PRAIRIE MONUMENT

Z-BAR RANCH, STRONG CITY, KANSAS

Prepared for

the National Park Service

by

Sid Stevenson, Ph.D.

Recreation and Park Management

Kansas State University, Manhattan, Kansas

November 1, 1990

Table of Contents

INTRODUCTION

The following report commissioned by the National Park Service, at the request of the Kansas Congressional Delegation, analyzes and evaluates the economic impacts of three alternatives of land use for the Z-Bar ranch property located near Strong City, KS.

(1) The first alternative is the continuation of private ownership, and here the study carefully examines the impact of the cattle industry on the local and regional economy.

(2) The second alternative is the ownership and management of the Z-Bar ranch property by the National Park Service as a moderately developed Tallgrass Prairie National Monument.

(3) The third alternative also involves NPS ownership and management but at an intensive level of development.

The multi-stage process involved: a detailed literature review, whereby other economic impact studies and numerous related materials were analyzed and interpreted; on site visits; interviews with landowners, ag' economists, cattle producers, and lodging suppliers; and careful perusal of county records and state statistical data. The portion of the study requiring an estimate of tourism demand necessitated the use of responses to a detailed survey by recognized specialists in either tourism or recreation and park management.

Because several of the benefits were short run (such as the construction costs of a new building) it was necessary to average expenses into two categories, developmental stage and post development stage. A similar process was used for the 1987 study completed for Osage County, Oklahoma. A five year developmental stage was selected to coincide with the change in "payment in lieu of taxes reduction after 5 years."

I. AREA VITAL STATISTICS

Chase County is located in east-central Kansas. Its economic statistics are gathered as part of the Emporia Standard Metropolitan Statistical Area. The county is primarily rural, not uncharacteristic of the nation's major grazing areas. The county encompasses 774 sq. miles.

The regional area encompasses Council Grove (population 2,500) in Morris County and Emporia (population 30,000) in Lyon County.

POPULATION

Distributed over this area are 3,013 residents. Approximately 1,800 of these people reside in five (5) incorporated towns ranging in size from Matfield Green (population estimate: 33) to Cottonwood Falls (county seat, population estimate: 890). Assuming these communities account for 4 square miles between them, the county's remaining population of 1,200 people is dispersed at a ratio of 1.56 persons per square mile. The county population ranks 97th among KANSAS's 105 counties and last of the state's eastern third (35) of counties.

The county has steadily declined in population over the last eight decades, as is illustrated in Table 1.

Table 1

Chase County Population Trends

Year	Population	Decline in %	Cumulative
1910	8,246	*	
1920	7,527	- 8.7	
1930	7,144	- 5.1	
1940	6,952	- 2.7	
1950	6,345	- 8.7	
1960	4,831	- 23.8	
1970	3,921	- 18.8	
1980	3,408	- 13.1	
1990	3,013	- 11.6	63.5%

Upmeier and Redwood, in "Kansas Populations and Projections" Kansas Business Review (1989) predict that under current land use practices and employment trends this decline is expected to continue, but at a somewhat relaxed rate. By 2020, they expect the population of Chase County to have declined an additional 4.5% per decade to approximately 2,600.

One third of the population is over 60. The remainder of the population is fairly evenly distributed among 6 groups spanning 10 years each.

EMPLOYMENT

Agricultural employment accounted for half of the jobs in the county in 1950. In 1980, agriculture accounted for 1 job in 4. Today the estimate is closer to 1 in 6 or 15% and projected to decline farther. Employment in this sector is expected to decline an additional 2% this year (KS Statistical Abstract). Table 2 illustrates the changes in employment over the last 30 years.

Table 2

Changes in Employment
Chase County, KS

Sector	1950	1980
Agricultural	790	299
Construction	112	113
Manufacturing	36	183
Transportation	214	72
Wholes' and Retail	218	265
Professional	67	278
Mining	3	8
Finance	34	79
Services	67	80
	1,351	1,377

(1980 U.S. Census)

INCOME

Corresponding with the decline in farm sector employment is a moderate rise in per capita income in the county.

Table 3

Per Capita Income, Chase County

	1980	1985	1987
Income	9,699	12,109	*16,011

* 1987 adapted from KS Statistical Abstract

II. PRIVATE OWNERSHIP

Impact on Oil and Gas Production

Neutralizing benefit (see description in III. Public Ownership)

Impact on Cattle Industry

Current Land Use (Grazing Yearling Beef)

The primary land use of the study area is ranching. The county has served as a bellweather for the 14 Kansas counties in this basic grasslands industry. The 1987 U.S. Census of Agriculture for Kansas indicates the acreage of pasture lands and rangeland totals approximately 3.6 million acres in the same 14 county Flint Hills region. KS Agricultural Statistics places Chase County in the Central Bluestem Pasture zone, along with Marion, Morris, Lyon and Coffey Counties.

The most typical use of the bluestem rangeland is for the seasonal grazing of steers. In this scenario, young steers are placed on pasture in mid-April and depending on the stocking rate, will graze until either mid-July (intensive double stocking) or early to mid-October (season long stocking). While on grass, these animals will gain as much as 250 lbs. Approximately half of these cattle are sold immediately after they are taken off grass to packing plants for processing. The remainder are either consigned or sold to feedlots and fattened prior to sale to processors.

Land Ownership

In order to more closely approximate the impact of the loss of 10,000 acres of ranchland, only those ranches in the county over 2,400 acres in size were reviewed. The majority of Chase County ranching is done by these large operations. Eighteen such operations in Chase County, comprised of 365 parcels, control 131,000 acres of rangeland. The average ranch size is 7,300 acres.

Absentee Ownership

In a search compiled by the Chase County Appraisor's office, it was determined that sixteen of these ranches or 88% are owned by persons or corporations residing outside of the county. The popular term for this condition is absentee ownership. In the event that the National Park Service or other Conservation interests did not purchase the Z-Bar property, it is therefore assumed that there is an 88% chance that this property would be purchased by an absentee owner. This absentee ownership substantially limits the local economic benefit. Darling (1988) cites payments to absentee landlords as a final payment (or leakage) from which no further local benefit accrues.

The impact in benefit to Chase County as a result of this absentee ownership is illustrated in section (a) pasture rent of Table 7.

Pasture Rental

These non-local landlords typically lease their rangeland to a local manager or "cowboy" as they are popularly called. A less likely alternative is that a foreman would be paid a salary to manage the property. The current lease rate at this stage is approximately $13.20 per acre for no services.

The local manager in turn, either runs his own cattle on the property (20% likelihood) or subleases the land to another entity (80% likelihood) that purchases a herd of cattle and pays the manager a fee ($1.80 per acre) to manage the operation. For this $1.80 per acre fee, the manager typically supplies the necessary labor, salt and minerals, water and limited medical services.

Stock Purchasing

The services of "cattle buyers", both locally and distant, are enlisted by these second generation pasture renters (stock owners) to acquire herds to stock the pastures. Local veterinarians indicate that approximately 50% of the herds are purchased in southern states. These herds are typically an accumulation of small lots. Another 20% of the herds are purchased from large cow-calf operations in Wyoming and Montana. Though the price of calves is higher from this latter supplier, their condition is reported to be superior justifying the additional expense. The remainder of the herd (30%) is purchased in Kansas.

Stocking Rate

Intensive grazing is utilized approximately 50% of the time in Chase County reports C. Ruckman in the KS Bluestem Pasture Report and M. Holder (Chase County Extension Agent). This estimate is further strengthened by a significant increase in the "Cattle on Feed" numbers reported near the middle of July, corresponding with the date when IES (intensively early stocked) steers would come off grass. Intensive early stocking utilizes twice as many cattle for roughly half the duration, but benefits from more efficient use of pasture because the nutrient content of the grass is much better during the early season. The cattle gain approximately 70% as much as those grazed season long.

Season long stocking typically utilizes 1 head per 4 acres of grass. IES doubles this rate and utilizes 1 head per 2 acres. Therefore, for all computations of value, the average of these rates, or 1 head per 3 acres will be used.

Weight Gain and Profitability

The figures presented in the following table are the result of several research studies; as well as interviews with producers, Chase County bankers, ag' statisticians, and range and animal scientists. Table 4 illustrates the gain in lbs. a producer could expect from each stocking method.

Table 4

Bluestem Pasture Grazing Results
Gain per Head

Source	Stocking rate: Season Long	IES
McReynolds, Barnaby Yearling Beef, Sept. '89	195 lbs.	-
E. Smith, C. Owensby J. Range Mgmt., 1978	255 lbs. (210/3.3 ac)	169 lbs. (141/1.67 ac.)
J. Mintert, KSU Animal Sci (estimates)	220 lbs.	185 lbs.
E. Smith, KSU Bulletin 838R, 1983	251 lbs. (1.67#/day)	-
Effects of Native Burning on Gain, 1950-65	246 lbs. (1.64#/day)	-
Average gain	246 lbs.	178.7 lbs.

Table 5 incorporates purchase and selling price data along with the average gain just specified in Table 4 for season long stocking to develop a value per acre of gross profit. USDA figures for buying and selling weight are five year averages for mid-October sales provided by Mintert (1990), KSU Agricultural Extension.

Table 5

Computation of Gross Profit (in dollars/acre)
of Season Long Grazing of Yearling Cattle
on Bluestem Pasture

Buying weight	X	Price	=	Purchase costs
580 lbs.	X	$.872 cwt	=	$ 505.70
Selling weight	X	Price	=	Sales revenue
(580 + 246) = 826 lbs.	X	$.7912 (5 yr. avg)	=	$ 653.53
Sales Revenue	-	Purchase Cost	=	Gross Profit
$ 653.53	-	$ 505.70	=	$ 147.83/head
Gross Profit/Head	/	4 acres	=	Gross profit
$ 147.83	/	4 acres	=	$ 36.96/acre

Table 6 illustrates the same type of calculations for IES grazing. IES does show a higher gross profit per acre of $ 47.29, for a difference of $ 10.33 per acre.

Table 6

Computation of Gross Profit (in dollars/acre)
of IES (Intensive Early Season) Grazing
on Bluestem Pasture

Buying weight	X	Price	=	Purchase costs
580 lbs.	X	$.872	=	$ 505.70
Selling weight	X	Price	=	Sales Revenue
(580 + 178.7) = 758.7	X	$.7912	=	$ 600.28
Sales Revenue	-	Purchase	=	Gross Profit
$ 600.28	-	$ 505.70	=	$ 94.58
Gross Profit/Head	/	2 acres	=	Gross Profit/acre
$ 94.58	/	2 acres	=	$ 47.29/acre

Since 50% of the ranching operations use IES and 50% use season long stocking, averaging of these figures is appropriate to estimate a typical gross profit per acre. The average gross profit per acre assuming 1 animal per 3 acres is calculated to be $ 42.12.

The average selling price equals $ 627.00, or the average of $ 600.28 (IES) and $ 653.53 (season long).

Using these calculations, the gross profit for the Z-Bar Ranch would approximate $ 454,936. (A test of these calculations of gain and gross profit per acre is provided in Attachment A).

Expenditure Patterns (Analysis of Economic Impact)

At face value, the gross economic impact appears substantial. However, in order to actually estimate the value of this money to the local community one must inspect where it is spent. The expenditure categories presented in Table 6 are adapted from the KSU Farm Management Guide #MF-591.

Table 7, Calculation of Economic Impact
from an Analysis of Expenses for a
10,800 acre ranch running 3600 head of cattle

Expense	Cost	Cost/Acre	Direct Local Benefit per acre	Direct Benefit in Dollars
a) Pasture Rent		13.20	x 12% (88% absentee) = $ 1.58/acre	$ 17,064
Property Tax	$20,251		x 100% (all local) = $ 1.87/acre	$ 20,251*
b) Management Fee		1.80	x 100% (1st round local) = $ 1.80/acre	$ 19,440
c) Other labor	.75/head	.25	x 100% (local labor) = $ .25/acre	$ 2,700
d) Veterinary	$ 7/head	2.33	x 10% (only 10% local) = $ .23/acre	$ 2,484
e) Marketing (incl. hauling commission)	3%	6.27	x 10% (only 10% local) = $ .63/acre	$ 6,804
f) Interest	28.73/head	9.58	x 15% (15% of cattle owners bank locally) = $1.44/acre	$ 15,552
g) Death Loss	2%	4.18	x (no benefit)	-
h) Repairs (util., oil)	2.50/head	.83	x 60% (util. - non local) = $ .50/acre	$ 5,400
i) Misc.	2.25/head	.75	x 30% (assoc. dues) = $ .25/acre	$ 2,700
j) Fixed Costs	3.73/head	1.24	x 5% (insurance, dep other interest) = $ .06/acre	$ 648
k) Calves Purchase	505.70/head	168.57	** (not included in calculations. price of benefit due to the determination that calves would sell regardless of Z-Bar tenant purchase).	

Total Expenses	$209.00 (x 3 head/acre) = $627.00		
Profit or (loss)	$ 0.00 ($ 627 revenue - expenses of $ 627)		
Direct Benefit		local/acre	Local $
		$ 8.61/acre	$93.043

*, ** (See justification, following)

Justification

Property tax was not included as a per acre expense to producers because it is assumed that the rental fee of $15 per acre is used to pay these taxes. Property tax payments are included in the measurement of local benefit, however.

The purchase price of calves is considered as an expense but was not determined to be of local benefit because the calves would be sold regardless of one landowner's ability or willingness to buy. O. Buller (1990) indicates that if the cattle production ceased on the Z-Bar other producers would likely step in to fill the gap. This substitution would probably be in the form of backgrounding, rather than pasture grazing and is not likely to occur in Chase County, but it is precisely this loss that is calculated in Table 7. The sale of calves is an important, viable part of the cattle industry, but will not be affected by the Z-Bar's fate.

Regional Impact

The previous calculations in Table 7 are designed to measure the direct economic impact only for Chase County. In order to measure the economic impact for the region adjustments are necessary. Several of the absentee landlords reside in this area increasing the amount of pasture rental retained (25% more or $35,640). Secondly, all of the veterinary expenses would be included in this region ($2.10 per acre more, or $22,680). Also, a livestock consignment house is located in Emporia resulting in a majority (70%) of the marketing costs staying in the region ($4.39/acre, or $47,412). Interest costs and fixed costs would also be retained in the region at a level correlated to the amount of local ownership, or an increase of 25% ($2.40/acre more, or $25,920). Lastly, assuming an increased retention of fixed costs at the same ratio yields $3,348. The total increase in direct benefit for this larger region is $134,912 more than the Chase County estimate alone; totalling $227,900.

Multiplier (measuring direct + indirect benefits)

Consistent with the measurement of total impact is the use of an economic multiplier to estimate total impact. Consultation with three economists, one each from the KS Statistical Service, the University of Kansas and Kansas State University respectively yielded the following leakage rates and estimates of multipliers.

Small rural communities such as Cottonwood Falls assumes a leakage rate of 70%	4
Larger, independent commercial centers, such as Emporia assumes a leakage rate of 65%	1.6
The state of Kansas assumes a leakage rate of 50%	2.0

An example of the increased secondary benefit can be illustrated using Emporia enterprises. Cottonwood Falls, because of its small size and lack of diversity, is unable to retain revenues for the purchases of goods and services. Emporia, on the other hand, is able to pull sales from a large area for farm and ranch products to well known retailers like Bluestem Farm and Ranch Supply; for the Peak Cattle Co. Auction House; for truckers; and for IBP, a beef processing plant. These services increase both direct and indirect benefits.

For specific industries such as the cattle industry, the multiplier is higher than the state average of all goods and services. Emporia, because of its specialized cattle industry services and the ability to capture and retain significant cattle production, hauling, processing and related revenues will be considered here to have a multiplier of 2.5. The resulting calculation recognizes the secondary impact of direct expenditures of $227,950 as $569,875.

Chase County is much more limited in its benefit. Because it lacks goods and services, a multiplier of 1.4 is appropriate. The selection of this multiplier results in an overall economic benefit of the Z-Bar to Chase County at $93,043 x 1.4 or $130,260.

Tourism

Several tourism ventures currently operate in Chase County without the presence of the National Park Service. No value will be included here for a benefit though, because the tours have continued and expanded even though the ranch is no longer a stop on the itinerary. (Flint Hills Adventures, 1990)

There is another way to estimate the value of these impacts. Figures developed by the Kansas Department of Wildlife and Parks provide an estimate of value for public access to private land. KDWP surveyed Kansas' landowners willingness to participate in a "fee access" program. Results from this study and similar programs in Oklahoma suggest that 5% of the landowners are willing to participate in such a program. For those that do, the expected revenues from leasing for hunting and fishing approximate $3 per acre. (10,800 acres x $3/acre x 5% likelihood) = $1,620 direct benefit. Add $2,000 for visitor spending in Chase County.

Table 8, Summary of Economic Benefits as a Result of Private Ownership of the Z-Bar

Economic factor	Local			Regional		
	Direct	(Multiplier)	Total	Direct	(Multiplier)	Total
Property taxes	20,251	(2.0)	40,502			
Cattle production	93,043	(1.4)	130,260	227,950	(2.5)	569,875
Tourism	3,620	(1.4)	5,068	7,000	(1.6)	11,200
TOTALS	116,914		175,830	234,950		581,075

III. PUBLIC (NPS) OWNERSHIP

The following sections address the gains to the local economy as a result of National Park Service Management of the Z-Bar Ranch.

Infrastructure

The reader must understand that the following scenarios are based on comparables and do not reflect the NPS decisions for the Z-Bar site. In order to estimate any economic impact resulting from public investment in the site, the author had to develop plausible development parameters. These parameters were developed by comparing NPS sites in the region, and include:

infrastructure size and cost
staff size
operating and capital budget estimates
program amenities

It appears that substantial work will have to be done to the buildings and structures in order to first stabilize and then preserve each in a physical state appropriate to the theme of the park. Historical renovation architects/specialists are currently compiling these estimates. The author's estimate follows:

Renovation costs	$550,000
Roadways and parking (site)	$450,000

Even though these costs are more appropriately attributed only to the 2 year time period of construction, in order to be comparable they are averaged over a 5 year developmental period. $1 mil averaged over 5 years equals $200,000 per year. The author estimates that 30% of these expenses would benefit Chase County directly in the form of material sales (crushed rock), unskilled labor and hauling.

Local benefit (over a 5 year period)	$ 60,000/yr
Regional benefit (80%)	$160,000/yr

A VISITOR'S CENTER is an appropriate and expected amenity for a National Monument. Preliminary discussion suggests that the Z-Bar ranch house could not be utilized in such fashion. Its use for administrative offices, and the modifications necessary in that regard, would impair rather than enhance the historic structure.

Based on real and estimated construction costs for recent NPS visitor centers and minimal employee housing (security) the expected construction cost approximates $3.0 million. Use of local sub-contractors, laborers, and

materials; as well as food and lodging and related services for other, non-local workers would approximate $120,000 per year. (based on 20% of project, over 5 years)

Local benefit (at 20% over a 5 year period)	$120,000/yr
Regional benefit (80% over a 5 year period)	$800,000/yr

Operation and Maintenance

Based on estimates of other NPS sites, the monument's annual operation and maintenance budget is anticipated to be $230,000. Personnel costs are anticipated to account for 85% of this figure. Assuming employee benefits (which do not typically benefit locally) at 35% of salary the direct local benefit approximates $127,075.

Direct local benefit	$127,075/yr
Direct regional benefit (add 10%)	$139,783/yr

Because a high percentage of the operating budget is salaries, there is also increased secondary economic benefit. The multiplier is increased from 1.4 to 2.0 in this instance to recognize the reduced leakage during the first round (Stevenson, 1990).

Add to this estimate a special projects budget of approximately $40,000 annually. Because of the park's early development stage, this figure is likely to be substantially higher.

Direct local benefit (40% for labor and materials)	$16,000/yr
Regional benefit (80%)	$32,000/yr

Taxes

Real and Personal Property -- Public Law 94-565 commonly referred to as the "Payment in Lieu of Taxes Act", (recodified as 31-USC-6901) provides for a formula based program enacted in 1976 to compensate local governments for land within their jurisdiction owned by the federal government and therefore not directly subject to local taxation. Historically, the program has been funded at least 95% of full funding.

For Chase County, the payments would approximate $27,000 during the first 5 years based on the following calculations (10,894 x .75) + (20,251) x (95%). After 5 years the payments would be reduced to only $.75 per acre. This figure could change with specific legislation as was the case for Section 3(a) of the Act.

Direct local benefit (first 5 years)	$27,000
(after 5 years)	$ 7,762
Regional direct benefit (first 5 years)	$27,000

Cattle Grazing

A cattle producer's willingness to pay in per acre rent will likely be reduced according to his perceived profitability. At $15 per acre rent (with services), cattlemen pay $45 per head in rent (3 acres/head) for moderately intensive stocking. Under the less intensive stocking rate proposed (1200 head on 5400 acres, or 1 head/4.5 acres) the willingness to pay per head should increase slightly to approximately $50/head. However, because of the limited herd size, the effect is an overall reduction in rental per acre. Instead of $15 per acre, producers will now be willing to pay approximately $11.11 per acre [($50/head x 1200 head = $60,000) ($60,000/$5,400 acres = $11.11/acre)]. Admittedly, this assumption favors the producer because there is little evidence to suggest that rental rates vary substantially due to stocking rate, though it appears equitable.

The level of local and regional economic impact still hinges on where this revenue is spent. Here, several possibilities are explored. Again, the alternative taken is the author's choice and does not reflect the position of the National Park Service. The author has selected option (3) for comparative purposes.

Options

(1) No locally retained pasture rent. One possible use of the pasture rent is that it is dedicated to the Land and Water Conservation Fund. In this event, there is substantially lessened economic impact, because the NPS acts essentially like an absentee landlord. The only local impact would come from cattle expenditures B (management fee) through J (fixed costs) in Table 7, and at a lower rate in each category because of less cattle on fewer acres. The local benefit of these expenditures drops almost 53% to $4.05 per acre. At this level local benefit would approximate $21,870.

(2) Full retention of pasture rent. Local retention of all pasture rents would enhance local economic impact by $9.31 per acre more than the previous example, assuming similar expenditure patterns as illustrated in Table 7. The resulting impact would approximate $72,144 [($4.05 + $9.31) x 5400 acres)]. Yet, full retention is unlikely, even if it is written into the legislation. Full rental fee retention would likely result in lower than anticipated operating revenues. Using these figures could bias the estimate by double counting the benefits.

(3) Partial retention of pasture rents. One locally written draft of legislation calling for a park calls for some portion of these pasture rents to be used to offset the anticipated loss of property taxes addressed in a previous section of this paper. Though the value is entirely speculative, $20,000 per year from pasture rent may be used as a direct payment to local units of government. The $20,000 value was selected because it approximates the payments forthcoming to Chase

Comparable attractions
- Public (4 NPS sites) (1 Fish & Wildlife site)
- Nature Conservancy sites
- Other prairie sites

Other Kansas attractions
- Dodge City, Hutchinson cosmosphere
- State park and reservoir visitation
- Museums (natural history, cavalry, etc.)
- Trail rides, bike tours, cookouts, bus tours

The description of Kansas tourists (both intra and interstate guests) was greatly assisted by the recent compilation of visitor data by Economics Research Associates. This 1990 data indicating visitor preferences, origin and spending patterns was incorporated into the questionnaire. (see the Survey in Attachment C)

Of particular interest during the forecasting process was the degree to which the park will serve as a compliment or competitor to existing and future attractions. It is generally believed and supported by the professional's opinion that the park will compliment existing attractions in Chase County. It is believed that the park will assist the area in achieving the "critical mass" of services and amenities that will result in a substantially increased number of visitors.

Findings

From the information presented in the survey instrument, study participants forecast the following levels of visitation for a NPS Tallgrass Monument on the Z-Bar ranch site. These forecasts were made for the first full year of operation. They assume an extensive marketing campaign by the KS Division of Tourism, the National Park Service, the KS Department of Wildlife and Parks, Regional Tourism Councils and local Chambers of Commerce.

At a moderate level of development (visitor's center, trail rides, interpretive services, self guided tours, and some cattle) the park would draw 65,000 people annually.

At an intensive level of development (visitor's center, bison herd, special events such as pow-wows, living history exhibits, concession services, school programs, etc.) the park would draw 108,000 people annually.

Participants felt that visitation to a moderately developed park would be predominately from current visitors to regional attractions. They estimated 30% of the visitors to be new, attracted primarily by the park.

On the other hand, visitation to an intensively developed park is expected from a significantly greater area; attracting 50% of its visitation in new visitors.

Study participants anticipate 60% of the visitation to a moderately developed site to be local (within 100 miles). The remaining 40% of the visitation would be regional, national and international.

For a highly developed site, the estimated composition of regional and national visitors changes, increasing to 60%.

Visitation Impact (moderate development)

If 30% of the visitors to a moderately developed park are new, their impact will be the greatest because none of it has been previously counted. 19,500 of these visitors are new. Before forecasting impact it is important to understand how long users will be on site, and how far they are traveling. In MRI's (1987) forecast of visitation to a 10,000 acre prairie site, four different types of users were recognized (the percentage of overall visitation is also included for each category: (1) day users, less than 4 hours, 25%; (2) day users, most of the day, 46%; (3) overnite users, 14%, and (4) vacationers, 15%.

Using these estimates which appear reasonable, we can calculate dollar impact.

County from "payments in lieu of taxes" during the first five years of park development. During this five year developmental period this extra revenue would offset some of the increased costs to local units of government precipitated by the park. After a five year period, the revenue would serve to offset the loss of property taxes no longer covered by 31-USC-6901. During the interim, sales tax on visitor expenditures will also be increasing to offset public service costs. As a result, the benefit anticipated from this option approximates $41,870 ($21,870 + $20,000).

Tourism Potential and Impacts

The region contains several attractions and recreational sites. These include state fishing lakes, federal reservoirs, state parks, historical sites, museums, scenic byways, etc.... However, the area is limited somewhat due to its isolated nature. The study site is located 17 miles from Interstate 35 and 40 miles from Interstate 70. The east west access on Highway 50 is improving but still suffers the reputation as a rather unsafe highway. Highway 177, directly adjacent to the site, has been designated a scenic byway and called "a delightful experience" by the writers of a popular touring guide.

The expanse of the surrounding tallgrass prairie is serene, peaceful; offering visitors a unique experience. Increasingly entrepreneurs are taking advantage of the resource. Some of the local visitor services include tours, bicycle trips, seminars, wagon train rides, trail rides, and prairie excursions. Yet, the area is still relatively unknown.

Estimating Visitor Demand

The summers are hot. Many opponents wonder why anyone would come. Yet, as we've delved into this research process, we've found prairie addicts, birders, escapists and aesthetics who feel there is nothing to compare to the prairie in diversity and value. People will come, but how many is hard to say. Understanding the present situation gives the reader a better grasp of the estimation process which is extremely difficult and is complicated by a number of factors.

Because the National Park Service has no units of Tallgrass prairie in its system, and rural Chase County, Kansas has few developed recreation amenities, it is difficult to estimate the visitation to such a site.

Typical forecasting methodology would normally include either trend analysis of similar sites of which there are none; or the development of a regression formula using known determinants of demand; which this author deems unreliable because of the area's currently limited use as a tourist attraction. It does appear, however, that The Midwest Research Institute incorporated some version of regression analysis in its forecast of visitor demand to a proposed 10,000 acre grasslands visitor center on Interstate 35 (20 miles south of the Z-Bar site).

A number of tourist visitation estimates have been developed during the last decade for various forms of a Tallgrass park in a number of different locations in Kansas and Oklahoma. Forecasted visitation at these sites ranged from 60,000 to 500,000 visits annually depending on the level of development.

The difficulty in projecting visitation is compounded by the unknown level of development. Different amenities (facilities and programs) will attract both different and varying numbers of visitors. It is generally believed that the greater the level of development, the higher the visitation levels to a point. Findings of the other studies in Kansas generally suggest that a good diversity of amenities will result in almost twice as many visitors as would come to a site with just basic amenities (visitor's center and basic interpretive services).

Methodology

To address these problems and develop an accurate projection of visitors, the author decided to utilize the Delphi method of forecasting. The Delphi method utilizes "professional opinion" as its basic premise.

For this study a list of persons deemed by the author to possess the necessary experience or professional background in recreation and park management or tourism was developed. The majority are academicians. To avoid the controversy which has typically surrounded the Prairie park issue in Kansas, the great majority of these professionals reside out of state. (Attachment B) None of the participants represented the National Park Service.

Each study participant was then sent a detailed survey instrument (Attachment C) asking them to forecast visitor demand to a NPS administered Tallgrass National Monument. Each was supplied with a large amount of information on which to base their estimate.

Instrument

The instrument provided current visitation data, willingness to pay information, trends and background, and other related studies that might help frame the Chase County situation. With the information provided, participants in the study were asked to estimate visitor demand for two levels of development; moderate and extensive. Participants were also asked to estimate the number of new visitors each scenario would attract, since it would be the new visitors that would bring additional economic impact. Some of the information provided in the instrument included:

Description of the Z-Bar Ranch
including location from population centers and major highways, and the Santa Fe Trail
Kansas visitor profiles
preferences, spending patterns, origin
Proximity of Z-Bar site to other popular recreation amenities
lakes, museums and historical sites, camping areas, shopping

Table 9, Economic Impact of
19,500 Visitors to Chase County

Visitor Type	Spent Locally	Subtotal	Spent Regionally	Subtotal
4,875 day users < 4 hrs on site	$ 4	19,500	$ 7	34,125
8,970 day users	$ 7	62,790	$ 10	89,700
2,730 overnight	$ 33 (20%)	18,018	$ 33	90,090
2,925 vacationers	$ 40 (25%)	29,250	$ 40	117,000
DIRECT ECONOMIC IMPACT		129,558		330,915
average/visitor		$ 6.65		$ 17.00*
* rounded				

Add to this impact an estimate of increased expenditure by the other 45,500 visitors, who already are visiting the area but choose to add a stop at the monument. Here the reader must be reminded that all of the study respondents indicated that the monument would be complementary rather than competitive in its interaction with other attractions. Therefore, it is appropriate to "add" an additional expenditure amount.

At a minimal expenditure of $3 per person, the additional direct local benefit would increase by $68,250 (assuming 50% spent in Chase County). The region would capture all of this additional spending ($136,500) since the site is virtually 20 miles (one way) from anywhere it takes a half-day commitment to visit it.

Direct local impact $129,558 + $68,250	=	$197,808
Direct regional impact $330,915 + 136,550	=	$467,465

Visitation Impact (intensive development)

With the forecast of 54,000 new visitors, more of which are regional and national in origin, the economic impact will increase substantially. In view of the increased number of non-local visitors (20%), it is reasonable to increase the average expenditure per person also by 20%. This change reflects increased travel, food and lodging costs, as well as a more elastic willingness to pay for onsite and related recreation experiences often exhibited by non-local recreationists (Cesario, 1976; Walsh, 1986; and C. Sorg and J. Loomis, 1984).

The average expenditure per visitor, from Table 9, was $6.65 spent locally and $17.00 spent regionally. A 20% increase would result in each visitor spending $8.00 locally and $20.40 in the region; increasing the direct benefit of just new visitors to $432,000 (54,000 x 8) and $1,101,600 (54,000 x $20.40).

The remaining 54,000 visitors spending would result in another $81,000 of local benefit, and $162,000 regional benefit.

Direct local impact $432,000 + $81,000	=	$513,000
Direct regional impact $1,101,600 + $162,000	=	$1.264 mil

Impact on Lodging

These impacts cannot occur in a vacuum and require that local infrastructure develop to meet the demand.

Analyzing the local supply of lodging illustrates some of the problems of tourism demand and supply. There is only one motel in Chase County, with 20 rooms. The owners describe their present clientele as a family and have built substantial repeat business. They're somewhat skeptical of their ability to serve new tourists, particularly young families. They plan no expansion in the event of a new park. Last summer, the motel's occupancy rate was approximately 100%, substantiating their indifference.

The county's newest addition is Carol's Country Inn, a "bed and breakfast" scheduled to open in December, 1990. The inn offers only four rooms. It does border the Z-Bar, has some intertwined history with the ranch, and would serve the visitors well. Another closely themed and attractive "bed and breakfast" will be the Donahue's Clover Cliff Ranch located eight miles southwest of the Z-Bar. Part of the structure recently burned, but the renovation plans still call for a four room bed and breakfast. It is an attractive location, with an imposing stone house not unlike the Z-Bar in stature; it will undoubtedly be popular. Without new construction, it is apparent that locally supplied lodging can serve only 20 new persons per night. At 20 persons per weekend night, and assuming a 20 week season, the maximum number of visitors on weekends would be 800. A more realistic occupancy rate would be 70%; which would serve 560 visitors.

These rooms could accommodate a substantial number of weekday visitors, but weekday visitation is not characteristic of recreationists. Approximately 70% of all visits to the Z-Bar will occur on weekends. As a result, local lodging will be very inadequate for maximizing impact. This dilemma also illustrates the problem with new construction. In rural Chase County, there is little opportunity for weekday occupancy, making construction for weekend peak use a very risky venture. Compounding this problem is the estimate that 70% of the site visitation will occur during the months of May through September. While the spring and fall shoulder seasons show some promise, the visitation patterns of recreationists are slow to change.

Within a half hour's drive of the park, lodging and other tourism related establishments in Emporia and Council Grove will benefit greatly from the park. Many overnighters in particular will be willing to make the short commute.

Property Values

The author anticipates a modest increase in county property valuation as a result of the Monument. The increased value will come as the result of (1) new and increased business activity and the resulting families, and (2) as the result of a small increase in population due to NPS personnel and their families. The resulting increase in demand for property will also reverse the decline in residential property values currently existing in Chase County.

There are several examples of possible increased business activity. Strategically located properties will eventually be recognized by assessors as having increased in value. Some of these property owners may begin to offer ancillary visitor services such as camping, trail rides, etc.

It is apparent that to sell $200,000 to $550,000 worth of new goods and services, some infrastructure and commercial services must develop. In order to meet the demands of tourists, new businesses will start, old businesses will expand. The two bed and breakfast enterprises described earlier are getting a head start with their ventures. As a slow metamorphosis takes place, several additional properties will be classified as commercial, thereby increasing their taxable value. Those adjacent property owners deemed to have strategic locations may benefit by being in a position to supply ancillary visitor services, such as developed camping, trail rides, etc.

Using a simplistic approach, one could assume that all of the new revenue went to one enterprise. At gross sales of $200,000 each year, one could expect to make a profit of $16,000 (assuming an optimistic 8% return on sales). If 5% of the enterprise's expenses were used to retire debt ($10,000), it is conceivable that the value of the property is $100,000 (assuming a $15,000 down payment and a 9.5% interest rate). In Kansas this commercial property would have a taxable value of $30,000. At a mil levy of 100, this property owner would be assessed a property tax of $3,000.

A moderately developed NPS Monument will result in additional property tax revenues from private sources of 3,000/year. A highly developed NPS Monument will result in additional property tax revenues from private sources of $8,250 per year.

Oil and Gas Production

Oil and gas production is another major sector of the regional and Chase County economy. Most of the oil is gone but natural gas continues to be produced. Gas wells exist but none are currently producing on the Z-Bar.

Because precedence has been established to allow gas production on National Park properties, and in view of the fact that the seller of the property wishes to retain these rights for 20 years, it seems reasonable (though not a preferred alternative) that production continuation could be negotiated into the process.

Given this possibility, there is no difference in benefit between either private or public ownership of the property.

Public Services

Schools could be modestly affected by the NPS ownership of the Z-Bar site. If the potential loss of tax revenue is mediated by the "payment in lieu of taxes" and earmarked "pasture leasing" revenue, the only costs would be those of serving additional students. These students would primarily be the children of NPS staff, but several would be the result of spin off benefits (jobs) in the service sector. Serving additional students costs in teacher salaries only if current teachers are not underutilized. In many small rural schools there is extra capacity for growth without much cost. In addition, new students will result in some increased aid from the state.

Water and Sewer: These costs were included in the estimated cost of renovation of the ranch site and construction of the visitor's center.

Roads and Highways: Recent construction on Highway 50 and the good condition of Highway 177 suggests that no major improvements are necessary for the park. However, increased visitor traffic in the numbers suggested will enhance the depreciation of the current condition. Joint and special project funding should meet these demands as they occur.

Fire and Police Protection: As visitation to the park increases, there will be increased incidents requiring emergency assistance, and police and traffic assistance. However, the presence of NPS personnel, some highly trained in law enforcement, should assist in the provision of a high level of protection. Fire protection is also an important concern for a grasslands area. One can assume, we believe, that since the grass is the major resource, and that prevention of any fire spreading to private land is a major concern, that quality fire protection will be available on the site.

In recognition of modest costs to the county and/or city of Strong City for the increased burden of these public services, an additional cost of <$15,000> per year is recognized. ($25,000 at intensive dev')

Sales Tax

Increasing pressure is being brought to bear on local units of government to find sources of revenue other than personal property tax. A number of communities are initiating or increasing sales taxes as a result. When an increasing proportion of local sales is attributable to non-locals, this method becomes increasingly attractive.

A 1 cent local sales tax (possible under current KS enabling statutes) would increase local revenue from visitors (only) by $1,970 assuming the park was operating at a moderate level of development (197,000 x .01).

At a high level of development, a 1 cent sales tax would raise $5,130 just from increased visitor's spending (513,000 x .01).

Sales tax at a regional level is also expected to increase at a similar rate. 2.5 times the benefit (government multiplier) should yield $4,925 (1,970 x 2.5).

Multiplier

The benefits presented so far are direct. In order to measure the total impact to the economy of these dollars recirculating (being spent and respent before leaking out in imports, savings or final payments to state and federal government), multipliers are employed. The multiplier utilized for sales is 1.4. This low number reflects high leakage in the retail and service industries for goods for resale that are not available locally in a rural area. When the primary input is in the form of salaries a multiplier of 2.0 is used to reflect the greater likelihood of retained expenditure. The regional multiplier is 1.6 recognizing the reduced leakage and greater retail sales pulling power described earlier in the Emporia example.

Table 10
Summary of Economic Benefits Resulting from Public (NPS) Ownership and Moderate Development of the Z-Bar Ranch during a Five (5) Year Development Period

Economic Factor	Benefit					
	Local			Regional		
	direct	(mplr)	total	direct	(mplr)	total
Payment in lieu of taxes	27,000	2.0	54,000	27,000	2.0	54,000
Earmarked lease payments	20,000	2.0	40,000	20,000	2.0	40,000
Renovation	60,000	1.4	84,000	160,000	1.6	256,000
Visitor center construction	120,000	1.4	168,000	800,000	1.6	1,200,000
Operations & maintenance	127,075	2.0	254,150	139,783	1.6	223,653
Spec' projects	16,000	1.4	22,400	32,000	1.6	51,200
Cattle Prod'	21,870	1.4	30,618	30,618	2.5	76,545
Tourism	197,808	1.4	276,931	476,465	1.6	747,944
Increased property value	3,000	2.0	6,000	3,000	2.0	6,000
Sales tax inc.	1,970	2.0	3,940	4,925	2.0	9,850
<Cost of more local services>	<15,000>		<15,000>			
BENEFIT	$579,723		$925,039	$1,684,791		$2,745,192

Benefit at intensive development

Intensive development will require an additional investment in infrastructure such as buffalo proof fencing, additional displays and visitor services, concession services, etc. At $1 million additional development, the local benefit over a 5 year period for renovation would double (plus $60,000 per year). The local benefit of the operation and maintenance budget should increase by 30% or $38,000 per year. Local tourism, as has been illustrated, will increase by 43,000 visitors spending an additional $315,192 ($513,000 - $197,808). Revenues from property tax (due to increased valuation) and sales

tax will also increase by a total of $8,410 ($5,250 + $3,160). Offsetting this benefit is an additional local cost of $10,000 per year for public services. The new total in direct benefits will approximate $991,325 [(60,000 + 38,000 + 315,192 + 8,410 + 579,723 - (10,000)].

Comparisons of benefit

Bottom line comparisons of the three alternatives is provided in Table 11. In addition to the three basic alternatives, data is also provided for the developmental and post development operation.

Table 11
Summary of Economic Benefits from Private or Public Ownership of the Z-Bar Ranch (in dollars)

OWNERSHIP Mgmt. Alternative	BENEFIT Local direct	Local total	Regional direct	Regional total
Private	116,914	175,830	234,950	581,075
Public (NPS) (moderate dev) developmental	579,723	925,039 *1.596x	1,684,791 2.9x	2,745,192 1.63x
Public (NPS) (moderate dev) post development	448,223	715,364	1,299,847	2,118,751
Public (NPS) (intensive dev) developmental	991,325	1,582,155	2,874,843	4,685,994
Public (NPS) (intensive dev) post development	766,294 **	1,223,005	2,251,253	3,669,542

*estimates for intensive development are based on ratios established for moderate development (1.596, 2.9, 1.63)
**decline in impact for post development (intensive) is also based on ratio (22.7% decline) from decline in moderate development stage impact.

Average benefit, after 5 years

After a five year development period several adjustments are necessary. Renovation, development and construction expenditures totalling $180,000 would need to be deleted. "Payments in lieu of taxes" must also be adjusted downward by $20,000 per year. These reductions will be offset somewhat by an increase of 25% in visitation (direct impact of $49,500) and budget adjustment for inflation (plus 15%, or $19,000). These adjustments will reduce local impact by $131,500 to $448,223 ($579,723 - $131,500) and are illustrated in Table 9. Adjustments for the post developmental period assuming intensive development utilize these same ratio estimates.

General Summary

From the information provided, it appears obvious that the establishment of an NPS area on the Z-Bar ranch site would result in favorable local and regional economic benefit.

Before the potential visitation can be reached, however, substantial increases in local infrastructure designed to service the needs of visitors must be developed. Yet, because of the rural nature of the study area, such development remains risky. The seasonality and weekend peaks of outdoor recreation visitation restrict ventures.

If it is decided that the Z-Bar is desirable for designation as an NPS study area, it may be desirable to consider provisions for the continuation of limited cattle grazing, as is provided in one scenario in this study.

Other Tallgrass Economic Studies Reviewed

National Park Service, 1987. New Area Report, Study of Alternatives, Tallgrass Prairie Preserve, Oklahoma.

National Park Service, 1990. "Great Basin National Park: A Tourism Laboratory", Parks and Recreation, March.

Mitchell R. and Lynn Peterson, National Park Service, 1989. "The Potential Impacts of a National Park Service Area on the Local Economy: Two Hearted River (Michigan)" Report to the NPS Regional Office.

Planning Service, Indian Nations Council of Governments, 1987. "Economic Impact Analysis, Tallgrass Prairie National Preserve, Osage County, Oklahoma".

Midwest Research Institute, 1987. "Market Potential for a Proposed Grasslands Interpretive Center". MRI Project Nos. 8690-D and RA-422-D. For the National Parks and Conservation Association.

Hartzler, F.E. et al, 1989. "Analysis and Projections for a Flint Hills National Monument", Roe R. Cross Institute for Business and Economic Development. April.

Other NPS Parks Compared

Homestead National Monument of America
Fort Scott National Historic Site
George Washington Carver National Monument
Great Basin National Park
Scotts Bluff National Monument
Wind Cave National Park

Economics Related Citations

Burress, David, 1989. "Economic Impact Multipliers for Kansas", Kansas Business Review.

Darling, David, and Jin Song Tan, 1989. "Retail Sales in Rural Communities", KS. Business Review.

Economic Research Associates, 1990. "Primary Market Research Findings", KS. Tourism Study.

Institute for Public Policy and Business Research, 1988-89. "Employment Trends by County", Kansas Statistical Abstract.

KS Dept of Human Resources, 1990. KS Occupational Outlook.

Sorg, C. and J. Loomis, 1984. "Empirical Estimates of Amentiy Forest Values: A Comparative Review", Rocky Mtn. Experiment Station Technical Report # RM-107.

Stevenson, Sid, 1990. "Can Publicly Supplied Recreation Opportunities Benefit Rural Economies by Reducing Revenue Leakage?" Presentation to the National Recreation and Park Association Congress, Phoenix.

Upmeier, H. and A. Redwood, 1989. "Kansas Population Trends and Projections", in Kansas Business Review.

Walsh, Richard, 1986. Recreation Economic Decisions, Ft. Collins, Colorado.

Agricultural (Cattle Production) Related Citations

KS State Board of Agriculture, 1990. "Bluestem Pasture Report", Kansas Agricultural Statistics.

Kuhl, Gerry, 1989. "Checklist for Profitable Stocker Programs", Cooperative Extension Service Bulletin, Kansas State University.

McReynolds, K.L. and G.A. Barnaby, Jr., 1989. "Grazing Yearling Beef", KSU Farm Management Guide, MF-591.

Mintert, James, 1990. "Feeder Cattle Prices", USDA's LS-214's.

Smith K. and C. Owensby, 1972-75. Steer Gains of IES Stocked Pastures", Warm Season Grasses in the Flint Hills, KSU Bulletin, 638R.

Smith K. and C. Owensby, 1978. "Intensive-Early Stocking and Season Long Stocking of Kansas Flint Hills Range. J. Range Management 31:14-17.

Smith K., 1983. "Effects of Burning Native Kansas Pastures", Growing Cattle on Grass, KSU Bulletin 638R

Webb, Jeane et al 1990. "A Whole Farm Economic Analysis of Season Long and Intensive Early Grazing Systems", Draft, KS Ag. Exp. Station Journal No 89-117-J.

Test of Net Gain (in dollars) Season Long

580 (.8719) + 246 lbs (x) = 828 (sale wt) x .7912 (price)
(gain) (x = price/lb of gain on grass)
$505.70 + 246 (x) = $653.53
246 (x) = $653.53 - $505.70
246 (x) = $147.83
(x) = $147.83/246
(x) = $ .60/lb for wt gained on grass
$.60/lb x 246 lbs = $147.83 (gain in dollars)
$147.83/4 acres = $36.96 per acre

Test of Net Gain (in dollars) Intensive Early Stocking

580 (.8719cwt) + 178.7 (x) = 758.7 (sale wt) x .7912cwt
$505.70 + 178.7 (x) = $600.28
178.7 (x) = $600.28 - $505.70
178.7 (x) = $ 94.58
(x) = $ 94.58/178.7
(x) = $ .53/lb for wt gained on grass
$ .53/lb x 178.7 lb = $ 94.59 (gain in dollars)
$ 94.58/2 acres = $ 47.29 per acre

Study Participants

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Lawrence, KS 66044

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Tourism Development Program
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Moscow, ID 83843

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Recreation Resources Center
University of Wisconsin-Extension
201 Towers, 802 State St.
Madison, WI 53703

Midwest Research Institute
425 Volker Blvd.
Kansas City, MO 64440

Survey Instrument

October 22, 1990

Dear _____:

This survey is part of a Special Resource Study being conducted by the National Park Service on an 11,000 acre cattle ranch in east-central Kansas.

We need your help in estimating the tourism demand for such a site, which will allow us to complete an economic impact analysis. Because no other tallgrass prairie unit exists in the NPS system, trend analysis and related forecasting methods were not deemed appropriate. A regression analysis was also deemed inappropriate due to the difficulty in selecting reliable determinants of demand, as well as financial constraints.

Therefore, in order to achieve a reasonable estimate of potential tourist visitation to such a site, I've chosen to rely on your professional expertise. This Delphi approach will allow each of you to weigh the information provided independent of each other and develop your own estimate. Only thirty people were selected so your confidential responseg is extremely important.

Your involvement will not take much time. Essentially you need to only answer two questions. Most of the information here is background material so that you can improve the accuracy of your estimate. The questions which will be repeated in more detail include: (1) Estimate of demand for the tallgrass park at two levels of development, including an estimate of new demand; and (2) estimate the visitor profile relative to zone of origin.

Please return the answers (<u>all blue pages</u>) by October 29.

Sincerely

Sid Stevenson
Ass't Professor, Leisure Studies

DESCRIPTION OF SITE

The Z-Bar Ranch is a 10,894 acre cattle ranch, located 2 miles north of Strong City, Kansas. The site includes a significant segment of tallgrass prairie. As the National Park Service system currently includes no areas of suitable tallgrass ecosystem, a feasibility study is underway to determine if this site is significant enough to warrant inclusion.

The following description of the Z-Bar Ranch is an edited version of a brochure developed by the Flint Hills Prairie National Monument Association, a local support group:

> A house so striking in appearance that passing travelers stop to inquire about its history is the three-story stone structure on state highway 177, north of Strong City in Chase County. Made of native limestone it stands against a bluff overlooking the lower Fox Creek Valley to the east. The architecture of this ranch home with its mansard roof and dormers adapted from Second Empire Style. It is fronted with three limestone terraces with wide stretches of grassy lawn between, one terrace being topped by a wrought iron fence, popular in the 19th century. Carved in the front of the house above the second-story level is the following: A.D.- J - 1881. The J is for Jones.
>
> The massive house was built more than 90 years ago by S. F. Jones, a pioneer cattle king. The wide, rolling hills of Chase County were dotted with homesteads. Settlers from the East, hooked by a resemblance between the steep, rocky prairies and the fertile hills of Illinois, broke the native grass and covered the hills with tiny cabins. Today these cabins are, for the most part, rambling ruins, the broken ground is left uncultivated, and the names of the pioneers have faded.
>
> S. F. Jones came to Kansas from the south about 1880, a cattleman with "money sticking out of every pocket," according to the memories of the old settlers. Soon after he reached Chase County he chose the site for his estate. A strange location for the sumptuous plans he made. Built against the rolling expanse of prairie, the limestone buildings glimmered in the sun like palace of marble. Every building on the place is constructed of white limestone from the famous Chase County quarries, and the expensive hand-cut stone would be impossible to reproduce today. Jone's ranch is known as "The Spring Hill Ranch," consisting of 7,500 acres, according to the records of the period. The cattle king set out to have one of the finest ranches in the country. He spent $40,000 on construction, which today would mean many times that sum. This included $25,000 on the house and $15,000 on a big, three-story barn. Twenty men worked day and night to complete the buildings, and tradition has it that activity during the construction was so great travelers often thought they had reached Strong City and tried to put up for the night.

The building was directed by David Rettiger, Strong City contractor. The stone for the house was quarried and dressed at the Rettiger home quarry north of Strong City. Terraces were to be submounted by three sets of stone steps, elaborate rock cutting combines curves and angles in the steps, and wrought iron fences finished the plans for the terraced garden, which was to have framed the house with color and beauty. The terraces were planted with roses and lilacs; the huge old lilacs still struggle among the pines, and here and there a shoot from the ancient rose bushes remind the visitor of the beauty of the terraces in the days of Steve Jones.

The fountain, which was supplied by a spring from the hills, was surrounded by wide, white stone. But the wild beauty of the terraces today lead the visitor up the step to the old house, filled with dreams of the "nobility of 1882" - echos of the gay parties and the joyous times which the old house must still remember. The massive, hand-carved wooden doorway stands intact, and here and there are intact decoration such as bas-relief. The downstairs of the rambling three-story house included two huge reception rooms. Between the big reception rooms is a hallway, and a carved and ancient stairway leading up to the modernized rooms.

There is evidence that the major attraction of the state to this group is to attend the historical museums.

The second major reason why people visited Kansas was to visit friends and relatives.

This is a natural base from which to build repeat visitors. The visitor segment could be receptive to an advertising campaign that, for instance, stressed a "come back and see your friends in Kansas" theme.

Visitors Flock to Kansas Museums and Natural Wonders.

When out of state visitors want to learn something about Kansas, or experience its unique role in the nation, they choose to see its historical museums. The leading tourist attraction is the Boot Hill Museum and Dodge City sites. Close to 12% of the respondents visited this museum. The other leading historical attractions selected are The Eisenhower Center (8%), Old Cowtown Museum (5%), Fort Scott National Historic Site (5%), and the Santa Fe Trail (6%).

The second group of attractions popular with out of state tourists are the natural wonders of Kansas. Over 15% of visitors went to a state park or lake. Hunting and fishing areas were visited by 6% of the tourists. The relative popularity of these areas is in sharp contrast to the finding that very few visitors associate natural wonders with their image of Kansas; an implication that the state's natural wonders are unexpected attractions "discovered" by the visitors. These natural resources could be marketed more aggressively by the state to its advantage. Another implication needing further investigation is that the natural resources may be attracting a small but growing repeat visitation.

Kansas is Well Positioned to Tap a Large Regional Tourist Market

Kansas' historical weakness as a tourist destination is compensated by its special locational advantage. Situated at the crossroads of the country, the state benefits from thousands of in transit visitors. Half of the respondents (49%) indicated that they did not choose Kansas as a final pleasure trip destination, but were passing through. Unfortunately, many of these people did not stop to visit the state's cultural and natural attractions. For instance, visitation rates varied from 2% for the Kansas Cosmosphere to 12% for the Dodge City museum.

Only 7% of the non-resident visitors selected Kansas as a final destination. Therefore, if marketing efforts move to intercept a larger amount of these visitors, the impact on the state's tourism revenues would be substantial.

SOURCE: Economics Research Associates
August, 1990

ORIGIN OF OUT-OF-STATE VISITORS
Figure III-1

Top Ten States	Total	Percent of Visitors	Cumulative Percent
Missouri	943	12.4	12.4
Texas	700	9.2	21.6
Colorado	624	8.2	29.8
Oklahoma	596	7.9	37.7
Illinois	512	6.8	44.5
California	407	5.4	49.9
Ohio	351	4.6	54.5
Indiana	258	3.4	57.9
Florida	212	2.8	60.7
Iowa	202	2.7	63.4
Foreign	124	1.6	
TOTAL	7,580		

SOURCE: Economics Research Associates
August 1990

The figures are illustrated in Figure III-1 to indicate graphically the absolute origin of visitors.

Attendance at Attractions

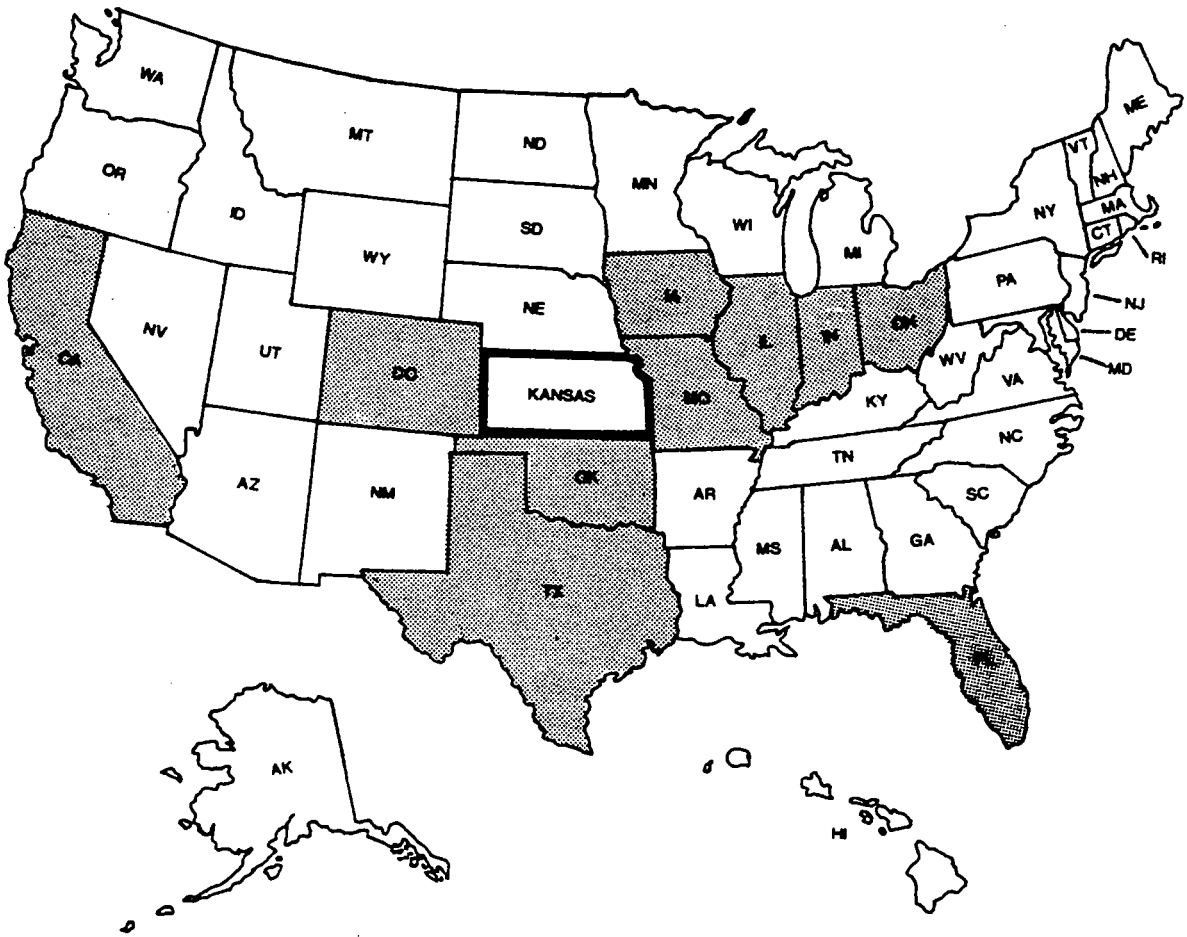
Visitor guides to Kansas list about 400 attractions within the State. These attractions range from major attractions such as the Kansas Cosmosphere to small local attractions. The number of attractions by tourist region are:

Northeast	156
South Central	107
Southeast	46
Southwest	34
Northwest	64
TOTAL	407*

* There is some limited double counting of attractions.

SOURCE: Guide to Kansas Attractions

OUT-OF-STATE ORIGIN OF VISITORS (TOP TEN STATES)



Source: "Linger Longer" Surveys and Economic Research Associates

From 1981 through 1985 Kansas enjoyed an overall increase somewhat higher than the national average, according to the USTDC Report. In 1985, the total of $1,896.9 was distributed as follows:

Figure III-2

Expenditure Category	Expenditures ($ Millions)	Percent of State Total
Public Transportation	$ 418.7	22.1%
Auto Transportation	446.1	23.5
Lodging	170.4	9.0
Food Service	515.6	27.2
Entertainment/Recreation	160.9	8.5
Incidentals	185.1	9.8
TOTALS:	$ 1,896.9	100.0%

(Source: U.S. Travel Data Center, Report)

It is interesting to note that 45.6% of the total of nearly half of all travel spending in Kansas was on transportation, while 27.2% was on food service. Entertainment and recreation, one of the major reasons given for visiting Kansas, accounted for only 8.5% of all spending. This is an indicator that much of the entertainment and recreation activities are outdoor, passive, and self-generated, such as hiking, swimming, or exercising, which do not require high expenditures. This data is shown in Figure III-2.

PROXIMITY OF THE TEN MOST POPULAR OUTDOOR RECREATION ACTIVITIES OF THE Z-BAR RANCH

Figure III-3

	% OF POPULATION PARTICIPATING ONCE OR MORE ANNUALLY	PROXIMITY TO THE Z-BAR
SWIMMING	50%	2 beaches and 3 public pools within 20 miles
SIGHTSEEING	47%	on site
PICNICKING	46%	on site
WALKING	41%	on site
DRIVING FOR PLEASURE	38%	scenic byway fronts site
NATURE STUDY PHOTOGRAPHY	36%	on site
DEVELOPED CAMPING	35%	existing within 15 miles (probable within 2 miles)
FISHING	31%	limited on site state fishing lake, 5 miles Federal reservoir, 17 miles
DAY HIKING	24%	on site
MOTOR BOATING	22%	Federal reservoir, 17 miles

COMPARABLE SITES

The following sites were selected to assist you in your forecast by providing a framework of visitation either at other attractions in Kansas, other NPS sites in the region or other prairie sites.

Homestead National Monument of America

	Visitation		
	1987	1988	1989
	43,000	35,000	38,000

visitor profile
point of origin: 30% local, 43 % regional and 23% national
destination: 71% day users, 29% pass through enroute
0% extended (2 or more nights)

Homestead is a 196 acre site located 4 miles west of Beatrice, Nebraska. It commemorates pioneers who braved rigors of frontier life to claim and improve 160 acres of ground. This site is comparable to the Z-Bar in that it is approximately the same distance from an interstate highway and population centers (Lincoln, Omaha and Grand Island are within 2 hrs. of Homestead like Wichita, Manhattan, and Topeka are all within 2 hrs. of the Z-Bar).

Amenities: Visitors Center, Picnic area, One room school, Trail, Log Cabin, 100 plus acres of tallgrass prairie.

George Washington Carver National Monument 1989 Visitation 61,000

visitor profile
point of origin: 47% local residents, 20% regional, 32.5% national, < 1% international
destination: 75% day users, 24% pass through visitors
75% are repeat visitors

George Washington Carver NM recognizes the birthplace of famous black educator, botanist, agronomist and inventor, George W. Carver. The monument includes a small 140 acre prairie restoration site. Carver NM is located approximately 25 miles from Joplin, Missouri. The park is not generally considered to be in a direct travel path to the Ozarks. Springfield, Kansas City and Tulsa, Ok, are all within 2 hrs.

Great Basin National Park (77,000 acres)
Baker, Nevada (newest park)

	Visitation		
	1987	1988	1989
	60,000	75,000	80,000

visitor profile: destination: 42% part of a major trip, 37% short trip
origin: 30% local, 50% regional
280 miles from Las Vegas (350,000)
250 miles from Salt Lake City (900,000)
Amenities: visitor center, Lehman caves, camping, hiking

Arthur Bowring Sandhills Ranch, Merriman, NE 1990 Visitation

Nebraska Game and Parks (fee) 5,000
Working 7,200 acre ranch with historic home
Amenities: antiques, visitor center, wagon rides
Located in remote area of sandhills region of Nebraska

VISITATION AT OTHER SELECTED KANSAS ATTRACTIONS

Attraction	Attendance 1987	1988	1989
Kansas Cosmosphere Hutchinson	350,000	350,000	350,000
Old Cowtown Museum Wichita	168,000	164,000	166,000
Museum of Natural History, Lawrence	120,000	120,000	120,000
Calvary Museum, Ft. Riley	40,000	47,000	65,000
Boot Hill Museum Dodge City	100,000	97,000	99,000

Melvern State Park	51,000 (40m)
El Dorado State Park	850,000 (40m)
Marion Lake (Corps of Engineers)	(27m)
Council Grove Reservoir (C of E) (473,000/4)	118,250 (20m)

SOURCE: Economic Research Associates

QUESTION #1. FROM THE INFORMATION PRESENTED SO FAR PLEASE ESTIMATE THE VISITATION (IN VISITS) TO A NATIONAL PARK SERVICE MANAGED TALLGRASS PRAIRIE NATIONAL MONUMENT ON THE Z-BAR RANCH AFTER ONE FULL YEAR OF OPERATION, FOR THE FOLLOWING LEVEL OF DEVELOPMENT. (assume all data presented is in visits)

MODERATE DEVELOPMENT: VISITOR CENTER, TRAIL RIDES, PICNICKING, INTERPRETIVE SERVICES, SELF-GUIDED TOURS, CATTLE.
#_____visitors. What percent are now visitors that would NOT have come to the area without the park?_____%

EXTENSIVE DEVELOPMENT AND MARKETING (VISITOR CENTER, BISON HERD, SPECIAL EVENTS SUCH AS POW-WOWS, LIVING HISTORY/WORKING RANCH EXHIBITS, CONCESSION SERVICES (FOOD, RETAIL, CAMPING), FISHING, COOKOUTS, ART SHOW, ETC. #_____visitors. What percent of these visitors are entirely new?_____%

HOW MUCH HIGHER (IN PERCENT) WOULD VISITATION BE IF THE SITE WAS MANAGED BY THE NATIONAL PARK SERVICE COMPARED TO EITHER THE AUDUBON SOCIETY OF NATURE CONSERVANCY? (CIRCLE ONE)
0% 50% 100% 150% 200% 250% 300% 350% 400%

ADJUSTMENTS

USE THE FOLLOWING INFORMATION TO MODIFY YOUR ESTIMATE. SOME OF THESE FACTORS WILL INCREASE VISITATION, SOME WILL DECREASE IT. TOTAL YOUR ADJUSTMENTS AND PROVIDE A NEW VISITATION FIGURE AT THE END OF THIS SECTION. YOU MAY HAVE ALREADY CONSIDERED A NUMBER OF THESE FACTORS. IN WHICH CASE THEY WILL NOT IMPACT YOUR ESTIMATE.

The Z-Bar is located in Chase county, one of the poorer counties in Kansas. The county is losing population, as are most of the neighboring counties. The primary employer is Agriculture.

reduce visits by_____ no change add_____visits

The Z-Bar is located 18 miles from interstate 35/turnpike, a primary route between the state's major metropolitan areas (Wichita, Kansas City, Topeka, Lawrence, Emporia) and 40 miles from interstate 70, the state's major east/west trafficway. These two routes carry the bulk of Kansas' visitors.

reduce visits by_____ no change add_____visits

The ability to serve visitors is limited. Lodging, restaurant and retail services are available in very limited quantities locally. All services are available within 18-25 miles.

reduce visits by_____ no change add_____visits

The environmental era: the increasing sensitivity to endangered ecosystems, and appreciation of things natural.

reduce visits by_____ no change add_____visits

The Z-Bar is located within 45 miles of 5 major reservoirs.
(visitation at 4 of these was given prior)

reduce visits by_____ no change add_____visits

Council Grove, KS. (pop 2,500) is located 17 miles north of the site. This historic community on the Santa Fe Trail boasts 12 sites on the National Register of Historic Places.

reduce visits by_____ no change add_____visits

The park property is fronted by US 177, a scenic byway

reduce visits by_____ no change add_____visits

Four visitation studies were conducted for a proposed Tallgrass park site in Osage county Oklahoma (the Nature Conservancy site). The estimates range from 60,000 to 400,000 (assumed the site was a national destination) visitors annually.

reduce visits by_____ no change add_____visits

Do scenic byways and the opportunity to view substantial amounts of tallgrass prairie from the highway reduce one's willingness to stop for an on-site prairie/historic experience?

reduce visits by_____ no change add_____visits

The buildings are unique enough to attract substantial numbers of visitors on their own merit, over and above the number that would visit just a prairie site.

reduce visits by_____ no change add_____visits

In a 1987 feasibility study of a grasslands interpretive center (and 10,000 acres of prairie) that was to be located on Interstate 35, approximately 25 miles south of the Z-Bar, MRI (Midwest Research Institute) estimated a moderately developed center would attract 4% of the non-commercial traffic or 259,000 visitors days by 1990. A more intensely developed center would attract <u>twice</u> that visitation.

reduce visits by_____ no change add_____visits

Nature Conservancy has just purchased a 30,000 acre prairie site in northern Oklahoma. The Conservancy hopes to expand this acreage to 57,000 acres; introduce bison and limited interpretive services on site. Will this enhance a Tallgrass park or compete with it for visitors?

reduce visits by_____ no change add_____visits

What is the impact of gasoline priced at $ 1.40/gal unleaded?

reduce visits by_____ no change add_____visits

TOTAL CHANGES

REDUCED VISITS_____ ADDED VISITS_____

CHANGE (difference)_____

NEW VISITATION ESTIMATE (moderate dev')_____

QUESTION #2 What percent of these visitors will be

____% local (within 100 miles)
____% regional (live in bordering state)
____% national
__2_% international

NEW VISITATION ESTIMATE (intensive dev')_____

QUESTION #2 What percent of these visitors will be

____% local
____% regional
____% national
__2_% international

APPENDIX B
ATTACHMENT 4

Chase County Ranches

> 2,200 Acres

	Owner*	Acreage	1989 Taxes
1.	Boatmens (Z-Bar)	10,894	20,251.32
2.	B	2,389	4,371.08
3.	C	4,726	6,402.78
4.	D	5,440.4	16,755.98
5.	E	9,952	18,376.37
6.	F	4,771.5	7,696.10
7.	G	8,304	15,961.12
8.	H	2,586.5	4,878.56
9.	I	3,965.1	9,110.98
10.	J	5,514	10,709.06
11.	K	3,637.9	10,198.47
12.	L	5,478	10,536.24
13.	M	9,338	15,539.14
14.	N	7,623.7	14,194.23
15.	O	5,448.12	9,552.76
16.	P	9,649.90	17,019.16
17.	Q	13,463.70	23,279.80
18.	R	17,701.62	30,085.46
		130,686.44	244,918.61

* Alpha codes used to protect privacy

In a search compiled by the Chase County Appraisers Office in 1990, it was determined that sixteen of the eighteen ranches (88%) listed above are owned by corporations or persons who do not reside in Chase County.

Level I Survey:
Contaminant Survey Checklist
of Proposed Real Estate Acquisitions

INSTRUCTIONS: Check for each category. Explain briefly where something other than "No," "None," or "Not Applicable" is checked. Discuss whether a Level II or III Survey will be recommended. Describe the distance if nearby is checked and whether there is a known potential pathway for contamination on site. Attach a legal description of the real estate property covered by this Survey.

A. Background Information

Bureau Name National Park Service

Site Name Z-Bar Ranch County Chase State KS

Date of Survey 6/26/90

B. Site Inspection Screen: On-site and nearby

		ONSITE	NEARBY	NONE
*1.	Dumps, especially with drums, containers (Read labels if possible; do not open or handle! If no labels, note identifying characteristics)	X		
2.	Other debris: household, farm, industrial waste			X
3.	Fills: possible cover for dumps			X
4.	Unusual chemical oders			X
**5.	Storage tanks: petroleum products, pesticides, etc.	X		
6.	Buildings: Chemical storage, equipment repair, solvents			X
7.	Structures -- evidence of asbestos sprayed fire proofing, acoustical plaster			X
8.	Vegetation different from surrounding for no apparent reason, e.g. bare ground			X
9.	"Sterile" or modified water bodies			X
**10.	Oil seeps, stained ground, discovered stream banks	X		
11.	Oil slicks on water, unusal colors in water			X
12.	Spray operation base: air strip, equipment parking area			X
13.	Machinery repair areas			X
14.	Pipelines; major electrical equipment			X
15.	Oiled or formerly oiled roads			X

* One 55-gal. drum was found mostly submerged in water and mud near a natural spring dammed as a livestock water source.

** Fuel storage room in ranch headquarters poultry house.

16. Electric trasmission lines: pole mounted transformers, pad mounted transformers -- evidence of leakage ____ ____ __X__

C. Record Searches (Coordinate with Realty, title search, others as appropriate.)

1. Past Uses which might indicate potential problems of site (CIRCLE any that are applicable.)
Manufacturing, service stations, dry cleaning, air strip, pipelines, rail lines, facilities with large electrical transforers or pumping equipment, petroleum production, landfils, scrap metal, auto, or battery recycling, military, labs, wood preserving, other describe ____X_____ None ____

Construction of livestock water tank at natural spring

2. Nearby land uses, especially upstream or upgradient, or that might have had waste to dump at site (see list under Past Uses)
Identify: _____ None __X__

3. Known contaminant sites in vicinity: NPL, state sites, candidate sites (check with EPA; State EPA counterpart) Yes ____ No __X__

4. Interviews on past use: owners, neighbors, County agents and any appropriate Federal authorities: Problems? Yes____ No __X__

5. Agricultural drainage history: surface, subsurface drains. Yes ____ No __X__

D. In acquiring land from another Federal agency, that agency has notified the Department of the past or current presence of a hazardous substance under the section 120(h) of CERCLA (Superfund). Yes ____ No ____

Not applicable __X__

E. Has a non-Federal entity identified any hazardous materials problems on or near the site surveyed? Yes ____ No __X__

F. A Level II study is recommended Yes ____ No __X__
A Level III study is recommended Yes ____ No __X__

G. Certification

I hereby certify that to the best of my knowledge, no contaminants are present on this real estate, and there are no obvious signs of any effects of contamination.

Signed _____ Printed Name _____

Date _____ Title _____

On the basis of the information collected to complete this form it is possible to reasonably conclude that there is a potential for contaminants, or the effects of contaminants, to be present on this real estate.

Signed /s/ Gary Willson Printed Name Gary Willson

Date 12-5-90 Title Ecologist

The surveyed real estate, or a portion thereof, contains contaminants. The owner of that real estate has/will cleanup the contaminants to bureau specifications. A Level II or Level III Survey is not required.

Signed _____ Printed Name _____

Date _____ Title _____

H. Approving Official

I concur with the above recommendation.

Signed _____ Printed Name _____

Date _____ Title _____

A BRIEF HISTORY OF THE Z-BAR RANCH

CHASE COUNTY, KANSAS

JOSEPH W. SNELL

Before Kansas Territory was created on May 31, 1854, the land the state now occupies was Indian country inhabited by both native and emigrant tribes which had been removed from their previous homes in the eastern United States; few Caucasians lived there.

What caucasians did reside on the prairies were soldiers stationed at places like Fort Leavenworth and Fort Scott; missionaries of several religious denominations, and Indian traders, farmers, and others who were assigned or licensed by the government to work with and near the Indians.

Both the Oregon and Santa Fe trails passed through Kansas, so many Caucasians saw the land and inspected the soil. Until the territory was created, they could not live here.

Naturally, once the area was opened, it was settled from east to west and it was not until the mid-1880's that the entire state was taken.

The Flint Hills of Kansas, a hilly, nearly treeless area except for the river bottoms, stretches in an elongated oval from almost the northern boundary down into Oklahoma. In their midsection, they begin about 75 miles from the eastern border and are 50 to 60 miles wide.

The central portion, in which Chase County and the Z-Bar Ranch are located, was the hunting ground of the Kansa and the Osage Indians.[1] Though prehistoric tribes had lived in the area, by the time Kansas Territory was created, it had no permanent Indian villages.[2] Because of abundant water in the ravines and nutritious grass in the hills, wild game abounded. Zebulon M. Pike, on his way west in 1806, crossed the Flint Hills on September 11 and 12. He stood on a hill, he wrote later, and ". . . in one view below me [saw] buffaloes, elks, deer, cabrie [antelope], and panthers."[3]

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[1]Waldo R. Wedel, Introduction to Kansas Archeology, Bureau of American Ethnology Bulletin No. 174 (Government Printing Office, Washington, D.C., 1959), pp. 39, 40.

[2]Interview with Martin Stein, Archeologist, Kansas State Historic Preservation Office, Kansas State Historical Society, Topeka, May 2, 1990.

[3]Louise Barry, The Beginning of the West, Annals of the Kansas Gateway to the American West, 1540-1854, (Kansas State Historical Society, Topeka, 1972), p. 54.

Because it was in the eastern portion of Kansas Territory, settlement in what is now Chase County came early. Wise and Butler Counties were created by the first territorial legislature which was held in 1855. In 1859, the territorial legislature carved Chase County out of the southern portion of Wise and the northern portion of Butler.[4] Over the next several years, both the territorial and State legislatures tampered with the borders of the county,[5] but these changes had no effect on the interior.

Chase County was organized and local government established in 1859. Cottonwood Falls was chosen as the county seat.

When Kansas entered the Union on January 29, 1861, Chase County was, as it is now, sparsely settled. By 1870, there were 1,975 residents[6] and by 1880, inhabitants numbered a little over 6,000, giving it a population density of 8 people per square mile.

The Atchison, Topeka, and Santa Fe Railroad building westward toward the Colorado border, crossed Chase County in March and April 1871.[7] In March, it had gone as far as Cottonwood station whose name later was changed to Strong City in honor of William Barstow Strong, the president of the Santa Fe.

Stockmen early recognized that "the grasses growing from this soil [of Chase County and the Flint Hills generally] are superior in their quality for fattening stock, and the sheltered sides of the bluffs, the nooks at the head of the valleys with the abounding timber... make this a peculiarly good country for the raising and fattening of cattle."[8]

Stephen F. Jones and Bernard "Barney" Lantry, the men who originally but independently amassed most of the land which comprises the Z-Bar Ranch today, came to Chase County about the same time, but from vastly different backgrounds.

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[4]Helen G. Gill, "The Establishment of Counties in Kansas," Transactions of the Kansas State Historical Society (Kansas State Historical Society, Topeka, 1904), vol. 8 (1903-1904), pp. 453, 457, 459.

[5]A. T. Andreas and W. G. Cutler, History of the State of Kansas (Chicago, A. T. Andreas, 1883), p. 1356.

[6]Andreas-Cutler, History of Kansas, p. 1355.

[7]Joseph W. Snell and Don W. Wilson, "The Birth of the Atchison, Topeka, and Santa Fe Railroad," The Kansas Historical Quarterly (Kansas State Historical Society, Topeka, 1968) vol. 34, no. 3 (Autumn 1968), pp. 330, 331.

[8]Andreas-Cutler, History of Kansas, p. 1355.

Stephen F. Jones[9] who put the Spring Hill Ranch together, came to Chase County in August 1878. A highly successful stock raiser, he had been born in Nashville, Tennessee, in 1826. As a 23 year old newlywed, he moved to Van Zandt, Texas, where he engaged in stock raising. In 1868, he took his family to southeastern Colorado, on the Arkansas river, where "his interests were very large, and he was very successful in his business enterprises, amassing a large property."[10]

Jones bought 160 acres a mile west and two north of Strong City from John C. and Jamima Rocker and William M. Langston for $2,000 on August 28, 1878. Known as the Langston farm, it was located on the south half of the southwest quarter of section 32, Township 18 South, Range 8 East, and the north half of the northwest quarter of section 5, Township 19 South, Range 8 East[11] and consisted mostly of bottom land spanning Fox Creek.

When Jones came to Chase County, it was reported that he brought with him 82 carloads [2,000 head] of "fine Colorado cattle" which he unloaded at Cottonwood station on Sunday, August 18, 1878. "1,000 head will be kept on the range north of the station, the balance will be taken to the vicinity of Council Grove," the Chase County Leader reported on August 22, 1878. The Chase County Courant, August 23, 1878, reported that "about 15,000 head [corrected to 1,500 head in the next issue] of cattle, from Colorado, were unloaded at Cottonwood, Tuesday and Tuesday night, by a Mr. Jones, of that state, who brings them to Chase County to graze on our fine prairie grasses. They are the first of an installment of 10,000 that are to be brought to Chase County from that state."

Whether Jones unloaded 2,000 head on August 18 or 1,500 head on August 20, 1878, is not definitely known because of the conflicting stories printed in the county's two newspapers.

On September 19, 1878, the Chase County Leader reported that Jones had started building a residence on the farm and referred to him as the "cattle man from Colorado."

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[9] Chase County Leader, (Cottonwood Falls, Kansas), August 22, 1878.

[10] Andreas-Cutler, History of Kansas, p. 1361; Strong City (Kan.) News-Courant, April 16, 1914.

[11] Register of Deeds, Chase County, Kansas, Deed Book, I, pp. 608-610.

Stephen Jones had some early connection with the Hildebrand brothers, with whom he was later associated in the lumber and banking business, since in early September 1878, they together purchased 100 head of local cattle.[12] Alone he also continued to bring in Colorado cattle, possibly from his former ranch there.[13]

It has been stated that when Jones came to Chase County, he brought some black servants who had been slaves before the Civil War in both his and his wife's families.[14] The 1880 United States Census for Kansas, however, showed that he had only one black family, consisting of husband, wife, and seven children, working for him. The couple, G. H. (43 years old) and Isabel (40 years old) Williams had been born in Tennessee, so it is reasonable to assume that they had worked for the Jones family there.[15] There is the chance that other black persons worked for him, but did not live close to Jones and thus were not counted with his household.

Over the next few years, Stephen Jones purchased acreage adjoining his original property in lots as small as 40 acres and as large as a thousand and more. The land was acquired from individuals; the sheriff of Chase County; the Missouri, Kansas, and Texas Railroad; and the Atchison, Topeka, and Santa Fe Railroad.[16]

The section where Jones built his large stone house and ranch compound had originally been deeded to the Missouri, Kansas, and Texas Railroad by the United States Government as part of a railroad land grant. This occurred on September 3, 1875.[17]

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[12] Chase County Leader, September 5, 1878.

[13] Chase County Leader, November 7, 1878.

[14] Chase County Historical Sketches, (Chase County Historical Society, n. p., 1948), vol. II, p. 136.

[15] United States Census for Kansas, 1880, Falls Township, Chase County. Microfilm copy in Archives Department, Kansas State Historical Society.

[16] Register of Deeds, Chase County, Kansas, Deed Books from 1878 through 1883.

[17] "Kansas Tract Books," microfilm copy, Manuscript Department, Kansas State Historical Society, vol. 9, p. 134.

Eventually, Jones purchased 7,000 acres. "All his land is enclosed with stone fence. He has about 300 acres under cultivation. His principal business is raising stock. He has in his herd thoroughbred Hereford, Galloway, and Durham stock to a considerable number. His hogs are of the Berkshire and Poland China breeds. He also raises some horses and sheep. He has the best improved farm in Chase County," an author wrote of him in 1883.[18]

The 1885 Kansas decennial census recorded in detail Jones' holdings as of March 1. He owned 7,000 acres all under fence. Of this, 9,600 rods were of stone, 320 rods of wood, and 960 rods of wire. At the time of the enumeration, Jones had 450 cattle on his land as well as 200 swine, 30 horses, 4 mules, and 8 milch cows.

The ranch was also a farm. Ten acres were in winter wheat and thirty in rye, both of which crops had been planted in the fall of 1884. He would plant 225 acres of corn, 25 acres of oats, a half acre each of Irish and sweet potatoes, 30 acres to sorghum, and 100 acres of tame grasses. Two hundred acres were in prairie grass.

Jones had 2,500 bushels of corn on hand and stated that he had cut 300 tons of prairie hay in 1884.

There was also an orchard. He had 201 apple, 60 peach, 106 plum, 31 cherry, and 8 pear trees. Nearly all the apple trees were too young to bear fruit, but the peach, plum, and cherry trees were producing.

In addition, the ranch had a quarter acre planted to raspberries, another quarter to blackberries, and one to grapes. Five acres were in walnut trees a year or older and six acres were in cottonwood trees.

Jones estimated that his ranch had a cash value of $150,000.[19]

Stephen Jones did not confine himself to ranching and soon became involved in business in Strong City. In June 1882, he bought an interest in the lumber and hardware business owned by Edward A. and George O. Hildebrand.

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[18]Andreas-Cutler, History of Kansas, p. 1361.

[19]Kansas State Census, 1885, Schedule 2, General statistics relating to farms, productions of agriculture, etc., in the township of Falls, Post office Strong City, G. W. Crumb, assessor, Department of Archives, Kansas State Historical Society. Data recorded as of March 1, 1885.

Later he helped organize the Strong City National Bank. Jones, being the largest stockholder, was chosen president. His ranching neighbor, Barney Lantry, a local stone contractor, was named vice president, and Edward A. Hildebrand was its cashier.[20] Jones also managed the Bank Hotel for several years.[21]

In September 1880,[22] Jones began building an impressive stone house and complex of ranch buildings on the hill overlooking Fox Creek. He employed contractor David Rettiger, who had a stone quarry north of Strong City, to construct the complex, the house of which has been described as "a blending of Renaissance influence and Plains Vernacular architecture."[23] It has lately been determined that the house itself more accurately depicts the Second Empire style of 19th Century architecture.

Rettiger was a co-owner of Emslie, Rettiger & Company which had there "probably the finest quarries in the state."[24] In the mid- 1880's, he built the Montezuma Hotel in Las Vegas, New Mexico.[25]

The house was set atop stone terraces pierced by elaborately cut rock stairs. One terrace was surmounted with a wrought iron fence and all were planted with roses and lilacs. A fountain was supplied with water piped from springs located up the hill which also supplied the house and a reservoir that was intended to supply 500 head of cattle with water for several weeks should the springs run dry.[26]

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[20]Strong City Independent, July 13, 1883, Andreas-Cutler, History of Kansas, p. 1361.

[21]Strong City (Kan.) News-Courant, April 16, 1914. There is some indication that the bank building was turned into a hotel, hence the name, but no primary evidence of this has been found.

[22]D. A. Ellsworth, "History of Chase County," Chase County Leader, August 12, 1936.

[23]"Spring Hill Farm and Stock Ranch House," National Register of Historic Places, Inventory-Nomination Form, Kansas State Historic Preservation Office, Kansas State Historical Society, Topeka, October 30, 1970.

[24]Strong City (Kan.) Independent, November 2, 1881.

[25]Chase County Republican, Strong City, Kansas, February 25, 1888.

[26]J. C. Hildebrand, "S. F. Jones' Cattle Ranch," Kansas City (Mo.), Live Stock Record, May ??, 1885, photocopy of article in possession of author.

The house, which contained 11 rooms, was entered through massive handcarved wooden doors. Two large reception rooms with fireplaces were separated by a hallway through which a carved walnut stairway ascended to the second floor.

A combination smokehouse and springhouse was connected to the house by a long tunnel complete with an air and light vent.[27]

While local newspapers of the time occasionally mentioned the house (one was intrigued by the fact it would have a mansard roof[28]), there was more interest in the huge barn. Also made of stone, it contained 6,480 square feet and stood 3 stories tall against a south sloping hill. The first floor was accessible from the south ground level, the second floor from the north ground level, and 2 ramps or bridges led to the third floor so that a team could be driven up one ramp, the wagon unloaded in the barn and driven out the other.[29] "It will take 5,000 pounds of tin to cover the mammoth barn of S. F. Jones on Fox Creek, and the tinners are laying it on," reported the Strong City Independent, on December 24, 1881. "Hildebrand Brothers are placing a windmill on the barn, having thirty foot wings, with a power equal to that of a twelve horse power engine."

The windmill generated considerable interest in the area. "The 'double-header' windmill of Mr. S. F. Jones'--the largest in the state--will be expected, when it gets down to business, to furnish motive power for a pair of corn burrs, a corn sheller, hay-chopper, root-cutter, and an oil-cake crusher," stated the Independent on February 4, 1882.

The cost of the structures was reputed to have been $40,000 of which $20,000 to $25,000 went into the house. Twenty men worked to complete the buildings, and they created such an aura of activity that local legend has it that travelers who passed by the construction thought they had reached Strong City.[30]

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[27]Kansas City (Mo.) Times, November 11, 1933.

[28]Chase County Courant, May 13, 1881.

[29]Amy E. Lignitz, "Spring Hill Ranch is . . . History in the hills," Manhattan (Kan.) Mercury, January 15, 1989.

[30]Chase County Courant, August 18, 1881; Chase County [Courthouse] Centennial, 1872-1972, (n. pub., n. p., n. d.).

Many of the workmen had helped construct the Chase County courthouse in Cottonwood Falls, a structure still regarded as outstanding in its design and construction. For the wood portions of the house, Jones employed L. P. Jenson, "one of the best carpenters in the state."[31] Jenson, too, had worked on the Chase County courthouse in 1871 and 1872.[32]

The editor of the Strong City Independent took a trip up Fox Creek in the fall of 1887 and reported on several ranches including Spring Hill. "Our return home was down the west side of the creek," he wrote, "passing a number of good looking farm houses and a fine farming country, along the road, until we arrive at the palatial residence of the wealthiest man in the county, S. F. Jones. It stands on a very prominent hill and can be seen for miles, either way. At a distance it could be readily taken for an old Scotch castle, with secret stairways and underground passages. It is a magnificent structure, and we would convey no possible idea of its beauty with less than a half column of descriptive writing of the highest order. . ."[33]

By 1887, Jones' ranch was reported to be worth $200,000. He specialized in Hereford, Shorthorn, and Galloway stock as well as Hambletonian thoroughbred and graded studs.[34] "Mr. Jones evidently intends to reach perfection in horses as well as in cattle," a reporter had stated in 1885. "A large herd of very fine English Berkshire hogs are also worthy of note; the head of the herd was brought from Kentucky, and weighs 580 pounds. . . . No one in the State will be found who is more interested in the improvement of live stock, and who contributes more cheerfully to that end. His success is his neighbor's success, though in some respects he is a 'land monopolist.' The thousands he has spent in improvements on the Fox creek ranch, have not been paid to wealthy syndicates, but mostly to comparatively poor men; and the people of Chase county are glad he is here," he concluded.[35]

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[31] Chase County Historical Sketches, vol. 2, p. 136; Chase County Leader, September 15, 1881; Strong City (Kan.) Independent, October 29, 1881.

[32] Chase County [Courthouse] Centennial, p. 20.

[33] October 15, 1881.

[34] The Official State Atlas of Kansas, (L. H. Evarts & Co., Philadelphia, 1887), opposite p. 44.

[35] Hildebrand, op. cit.

For some reason Jones decided to leave Chase County. On February 13, 1888, he and his wife, Louisa, sold the ranch to Barney Lantry for $95,000.[36] Included in the sale were all the "tenements, hereditaments, and appurtenances" except for a strip of land 8 feet wide and 3 and 3/4 miles long off the west side of sections 19, 30, 31, and lots 8, 21, and 22 in section 18, and 2 acres which Jones had donated to school district number 14 in 1882. The sale involved 6,800 acres.

Stephen F. Jones and his family left Strong City on February 28, 1888,[37] but his daughter and son-in-law, Mr. and Mrs. Wit Adare, remained for some years. David Rettiger was again employed by Jones to build another home, this time on Locust Street in Kansas City, Mo., of cottonwood limestone.[38]

The man who bought the Spring Hill Ranch had come to Chase County a year before Jones and though few people apparently knew it, he was perhaps even more wealthy.

He had been born in Brasher, New York, August 10, 1832, and raised on a farm. When he was 17, he went to Rutland, Vermont, to learn the stonecutter's trade, and there he met and married his wife, an Irish maid named Bridget Fogarty. In 1851, he moved to Wisconsin where he practiced his trade and also served for some time as a steamboat captain on the upper Mississippi. For the remainder of his life, he was called "Captain."

In 1867, he began to work in railroad construction in Kentucky, Tennessee, and Texas. After he returned to Wisconsin in 1872, he held the position of superintendent of the Wisconsin Valley Railroad.

When he moved to Chase County, he purchased land near Strong City where good limestone was available. He began almost immediately to secure contracts from the Santa Fe Railroad to build stone bridges, lay ballast, etc. As time went on, he and his sons became more and more involved in total railroad construction: grading; laying track; and constructing bridges, stations, and other operating buildings. One of the jobs they did was to construct the cog railroad line to the summit of Pike's Peak in Colorado.[39]

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[36] Register of Deeds, Chase County, Kansas, Deed Book, 27, pp. 210-212.

[37] Chase County Republican, March 3, 1888.

[38] Ibid., April 14, 1888.

[39] Chase County Historical Sketches, v. 1, pp. 152-155; Andreas-Cutler, History of Kansas, p. 1361; Ellsworth, "History of Chase County," Chase County Leader, Dec. 2, 1936, reporting the contract as of November 28, 1889.

"His bridge and depot masonry is celebrated from Lake Superior to Southern California and railroads in Kansas, Colorado, Utah, New and Old Mexico, and California show solid samples of Capt. Lantry & Son's stone work, as they own immense quarries, and masonry is their specialty," reported the Prairie du Chien (Wisc.) Wisconsin Courier shortly after he bought the Spring Hill Ranch.[40]

From his September 1877 arrival in Chase County, Lantry began to purchase land. The Chase County Leader, August 29, 1878, reported that he was "building a fine house on his farm (formerly the Hinckly farm). When completed it will be one of the best residences in the county. Mr. Lantry's family will remove here from Wisconsin this fall." The house was built on the northwest edge of Strong City and from there west and north, Barney Lantry eventually owned some 15,000 acres of Chase County land.

In 1883, his farm consisted of about 3,500 acres located on both Fox Creek and the Cottonwood River. "His farm is enclosed by nineteen miles of stone fence. He has about 500 acres under cultivation. His principal crop is corn, but he also raises wheat and oats. He raises many cattle, sheep, and hogs, paying special attention to the breeding of fine stock. Mr. Lantry owns considerable town property at Strong City. . . and he has done much to build up and improve this rapidly growing city. He is Democratic in politics, but is not an active politician. . . ."[42] "The Barney Lantry farm west of Strong City is one of the finest in Kansas," reported the Chase County Leader on December 17, 1885.

In 1887, it was reported that Lantry owned 5,800 acres which he began purchasing in 1877. Of that, 10 were in orchard, 150 were in timber, and 25 in tame grass. The remainder was stock farm on which he held Herefords, Short Horns, and Polled Angus thoroughbred and graded. The value of his ranch was placed at $175,000.[43]

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[40] Article reprinted in the Chase County Republican, March 31, 1888.

[41] Chase County Historical Sketches, vol. 2, p. 154; Andreas- Cutler, History of Kansas, p. 1361.

[42] Andreas-Cutler, History of Kansas, p. 1361.

[43] Official Atlas of Kansas, p. 139

Though both Jones and Lantry were often reported about in the local newspapers, those mentioning Lantry were usually associated with his construction contracts while those about Jones dealt with stock and his ranch. The Lantrys were well respected members of the community and the Catholic church. They gave land, for instance, to the church for St. Anthony's Cemetery, just northwest of Strong City, in which they eventually were buried.

Lantry's ranch was called Deer Park Place because he kept a small herd of deer for his own amusement.[44] After the consolidation of Spring Hill Ranch and Deer Park Place, the entire ranch was sometimes called by either name.

He resided in Strong City, so never lived in the huge stone house which Stephen Jones had built. It was instead occupied by tenant farmers. It was not until Otto Benninghoven purchased the house did an owner live in it again.

Barney Lantry died of diabetes at his home in Strong City on December 7, 1895. "He leaves a fortune of nearly a million dollars," the Chase County Leader reported.[45]

The firm of B. Lantry and Sons was changed to B. Lantry Sons, and brothers Henry E. and Charles J. continued in the construction business. Henry died in 1904, and the family began to dispose of its land. On March 1, Charles J. Lantry, in whose name the land was registered, sold 9,682.55 acres, including the old Spring Hill property, to C. C. Patten of Reading, in Lyon County, Kansas. The purchase price was $180,636.92.[46] The remaining land was sold next year to F. W. Freeman of Topeka, Kansas.

Patten and his wife, Nannie, then living in Los Angeles, sold 1,080 acres, including those on which the stone structures built by Stephen F. Jones were located, to Otto Benninghoven on March 15, 1909, on a time payment basis. Unfortunately, Benninghoven died before the land was paid for, but on May 1, 1917, his widow, Flora, and his sons, Curt, Fritz, and Rhein, were able to pay the balance off and the land became theirs. The price was given as $37,800.[47]

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[44] Chase County Historical Sketches, vol. II, p. 154; Official State Atlas of Kansas, opposite p. 47.

[45] Ellsworth, "History of Chase County," Chase County Leader, January 6, 1937.

[46] Register of Deeds, Chase County, Kansas, Deed Book 40, pp. 608-10: Andreas-Cutler, History of Kansas, p. 870; Chase County Historical Sketches, vol. II, p. 154.

[47] Register of Deeds, Chase County, Kansas, Deed Book 47, pp. 186, 187.

On April 6, 1921, Charles and Nannie, by then back in Kansas, sold their remaining land to Lester B. Urschel of Marion County, Kansas, for $400,000.[48]

Fourteen years later, George H. Davis, a Kansas City, Missouri, grain dealer, began to reassemble the Spring Hill/Deer Park Place ranches. On January 2, 1935, he purchased 10,000 acres from Lester B. and Beulah B. Urschel, and on April 2, he bought the 1,080 acres from Flora Benninghoven all for undisclosed amounts.[49]

For the most part then, the original Jones and Lantry ranches were back intact.

George H. Davis was president of Davis-Noland-Merrill Grain Company in Kansas City, Missouri. With the purchase and consolidation of the ranches, the operation in Chase County became known as the Davis Ranch though he had transferred title to Davis-Noland-Merrill on January 30, 1935.[50] When Davis died in 1955, the name was changed to the Davis-Noland-Merrill Grain Company Ranch and was operated under this name until August 25, 1975, when the company changed its name to the Z-Bar Cattle Company and the ranch became the Z-Bar Ranch.[51] The ranch was sold to Boatmen's First National Bank of Kansas City on November 26, 1986.[52]

The stone ranch building complex constructed by Jones in 1880-1882 was entered on the National Register of Historic Places on April 16, 1971, one of the first such designations in Kansas. Considerable renovation was accomplished in the mid-1980's. Boatmen's has signed an option with the National Audubon Society for the purchase of 11,000 acres which includes the Spring Hill Ranch house and outbuildings as well as the Lower Fox Creek schoolhouse a short distance north.

Residents of the Fox Creek area decided in 1878-1879 that a school district should be formed for the education of their children. Being one of the earlier district formed, it was given the number 14 though it was commonly called the Lower Fox Creek School.

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[48]Register of Deeds, Chase County Kansas, Deed Book 47, pp. 480-483.

[49]Register of Deeds, Chase County, Kansas, Deed Book 56, pp. 596-598, and Deed Book 57, p. 255.

[50]Register of Deeds, Chase County, Kansas, Deed Book 65, p. 36.

[51]"Explanation of Name Change," Spring Hill Ranch file, Kansas State Historic Preservation Office, Kansas State Historical Society, Topeka.

[52]Register of Deeds, Chase County, Kansas, Deed Book L, pp. 225-231.

The site for the schoolhouse was donated by Stephen F. Jones with the stipulation that the deed would revert when the place was no longer used as a school. The deed was recorded on June 14, 1882, after the building had been completed.

Stone for the school came from Barney Lantry's quarry, but was laid up by David Rettiger.

The first term in the new building began on September 1, 1884, with Dora Peer as the teacher. Average enrollment was about 19 students of all grades. The school was closed in 1930 and the district disbanded in 1946-1947. At that time, the schoolhouse and its grounds reverted to the adjoining ranch. A tornado or windstorm destroyed the original roof; a tin replacement was put on and the building used to store hay.

In 1968, the 14 Garden Clubs in the Mid-East District of Kansas selected the school's restoration as their special project. After securing the approval of the Davis-Noland-Merrill Grain Company, the clubs raised funds and renovated the building to as near its 1882 configuration as possible. It was placed on the National Register of Historic Places on September 6, 1974.[53]

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[53]Lower Fox Creek School, "Statement of Significance," National Register of Historic Places Nomination Form, Kansas State Historic Preservation Office, Kansas State Historical Society, Topeka.11

ANALYSIS OF MANAGEMENT ALTERNATIVES

MANAGEMENT OBJECTIVES	ALTERNATIVE A NO ACTION	ALTERNATIVE B FLINT HILLS / Z-BAR NATIONAL HISTORIC SITE	ALTERNATIVE C FLINT HILLS PRAIRIE NATIONAL MONUMENT	ALTERNATIVE D MGMT BY STATE OR OTHER GOVERNMENT AGENCY	ALTERNATIVE E PRIVATE CONSERVATION ORGANIZATION RESERVE
1.Protect and interpret natural resources.	Protection necessary to continue beef production no natural resource interpretation	Only a small area of prairie protected Limited interpretation of prairie / natural resources	Protects and manages a significant segment of prairie ecosystem Full range of natural resource interpretation	Same as "C"	Same as "C" but with limited interpretive services
2.Protect and interpret cultural resources.	Ranch HQ complex maintained for private use no cultural resource preservation or interpretation	Historic buildings stabilized and maintained for interpretation and visitor use	Same as "B"	same as "B"	Historic structures maintained and adapted for a variety of uses
3.Protect and maintain scenic quality.	Determined by future owners through their management actions.	View from ranch buildings will be maintained and possibly enhanced	Scenic qualities throughout ranch will be maintained at existing level and possibly enhanced	Same as "C"	Same as "C" although possibly not enhanced
4. Minimize impact of government influence.	None	Min. federal presence 60K (est.) visitors federal government's management practices may differ from local custom. Land off tax rolls	Same as "B" except a more obvious federal presence 100K (est.) visitors	Presence of state or local agency site management may differ from local custom moderate tourist traffic	Management practices may differ Some increase in local tourist traffic
5.Contribute to local, regional, and state economy.	Continued contributions to local economy from livestock industry est. at $500,000	Tourism related and government spending locally estimated at approx. $2 million. Payments-in-lieu-of-taxes authorized.	Same as "B" except tourism related and government spending could approach $4.6 million.	Moderate impact from increased tourism and related government spending	Some local impact from tourism and and related spending
6. Provide access and development for visitor use.	Limited, at owner's discretion	NPS development as appropriate to size and purpose of area	NPS will provide a full range of access development, and visitor services.	Provided by state of local agency	Level of development limited by organization's funding / management policies

COST ESTIMATES: MANAGEMENT ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E
	NO ACTION	FLINT HILLS / Z-BAR NATIONAL HISTORIC SITE	FLINT HILLS PRAIRIE NATIONAL MONUMENT	MENT BY STATE OR OTHER GOVERNMENT AGENCY	PRIVATE CONSERVATION ORGANIZATION RESERVE
LAND ACQUISITION	-0-	$ 4 MILLION	$4 MILLION	$4 MILLION	$4 MILLION
DEVELOPMENT	-0-	$ 1-2 MILLION	$2-4 MILLION	$ 1-2 MILLION	< $ 1 MILLION
OPERATIONS AND MAINTENANCE (ANNUAL)	-0-	$ 250 - 350,000	$ 450 - 750,000	$200 - 400,000	$100 - 200,000
HISTORIC STRUCTURES STABILIZATION	$55,000 (If desired)	$55,000	$55,000	$55,000	$55,000

Note: cost figures are estimates only